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Editorial

Write to: *Pilot*, Kelsey Media, The Granary,
Down's Court, Yalding Hill, Yalding ME18 6AL

Editor Philip Whiteman Tel 07785 616207
Email philip.whiteman@kelsey.co.uk

Assistant Editor Eugenio Facci
Email eugenio.facci@kelsey.co.uk

Design: Sean Phillips, atg-media.com

Contributing Editors James Allan, Nick Bloom,
Bob Grimstead & Peter R March

News & Flight Test Editor Dave Unwin

Regular contributors Tim Cooper, Howard Curtis,
Bob Davy, Paul Fiddian, Colin Goodwin,
Nigel Hitchman, Charlie Huke & Keith Wilson

Advertising Chris Jeffery Tel 01732442144
Email Chris@talk-media.co.uk

Management

Chief Operating Officer Phil Weeden

Retail Director Steve Brown

Audience Development Manager Andy Cotton

Publishing Director Gareth Beesley

Events manager Kat Chappell

Print Production Manager Georgina Harris

Print Production Controller Kelly Orriss

Subscription Marketing Director Gill Lambert

Subscription Marketing Manager Kate Chamberlain

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UK customer service team: 01959 543 747

Customer service email address: cs@kelsey.co.uk

Customer service and subscription postal address:
Pilot Customer Service Team, Kelsey Media,
The Granary, Down's Court, Yalding Hill,
Yalding ME18 6AL

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Where a bit of competition might be welcome

Significantly, the Light Aircraft Association is the only game in town when it comes to revalidating Permits to Fly for a large segment of the UK GA fleet, especially since it has added to its portfolio an increasing number of 'orphan' production aircraft previously looked after by the Civil Aviation Authority.

In the days when the CAA was losing its corporate expertise through the brain drain to EASA, not to mention employees skipping off to set up their own consultancies, this could only be seen to be a good thing. Who better to administer small 'Permit aircraft' than a body staffed with people steeped in light aviation, supported by equally experienced volunteer inspectors, many of whom had built their own aircraft and really knew the ins and outs of both airframes and engines?

Busily refocusing, now it is once again 'authority in command' after the government threw the EASA baby out with the Brexit bathwater, the CAA is in no position today to look after light aircraft Permit and engineering issues, even if it wanted to. "No change there – snafu," you might say. But what about the LAA?

Over the last couple of years, the association has faced its own brain drain with the entirely foreseeable retirement of its long-serving, experienced engineering staff. While it continues to tell us what a magnificent job its new generation of engineers is doing through press releases and on the pages of its expensively produced journal, *Light Aviation*, we are hearing complaints about extra Permit paperwork – much of it seen as excessive by the inspectors *Pilot's* contributors are in contact with – and lengthy delays. People are losing weeks of

flying while the LAA engineering department scrutinises the paperwork, which either gives the worrying impression that something is wrong with the way the old guard did things or that the new people... Well, how can one put it politely without giving offence?

Many of us have been fretting over this Permit lark for years. We and our friends do the maintenance work on our aeroplanes and prepare them for inspection. For a modest consideration, the inspector does his bit, then we play test pilot, diving to Vne (why?) and all that. For its fee of around £300, the LAA then looks at the completed form and decides if, on the basis of the figures we've reported, the aircraft remains fit to fly. This has come to seem a lot of money for a not very good service.

In this issue you will find Dave Unwin's flight test of the Aeroprakt Vixxen, an aeroplane that outperforms and is better equipped than my L-4 Cub yet qualifies as a microlight under the new 600kg rules. Like many orphaned vintage types, the Cub's maximum all-up weight is around 550kg. Can you see where my thoughts are going? How much does the British Microlight Association charge for issuing or revalidating a Permit and how good is their service? Maybe the LAA does have some competition after all – and maybe that would be a good thing.

Philip Wh

**Philip Whiteman,
Editor**



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PHOTO: ALPI AVIATION



▲ You will never be confused again with the SafeSky traffic awareness app

▼ An empty weight of 450kg, four seats and a 162kt cruise speed. Don't believe it? Turn to page 56





PHOTO: PHILIP WHITEMAN

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Deliveries of piston-engined aeroplanes soaring

The light aircraft market keeps showing strong numbers according to the latest Aircraft Shipments and Billings Report issued by GAMA (the General Aviation Manufacturers

Association). In the first three months of 2023 a total of 294 piston-engined aeroplanes were delivered around the world, a number that is 10% higher compared to the same period last year.

The rise is noticeable because the piston engine market segment had not recorded a decline during the Covid pandemic, and so this is not a rebound from historically low numbers – flying schools kept ordering aircraft during Covid in anticipation for a pilot shortage.

The first quarter of 2023 also saw a strong growth in the helicopter market, with the total value of billings increasing by almost 60% year-on-year. Deliveries of turboprop aeroplanes saw an increase as well (+6.4%), while the business jet market was flat (-0.8%).

Pete Bunce, GAMA President and CEO, highlighted that the industry is showing strong numbers despite facing several concurrent difficulties. "The continued health of the general aviation manufacturing industry is encouraging, particularly in light of persistent supply chain, workforce and North American regulatory process challenges. During this transformative time in aerospace, our manufacturers continually demonstrate that our sector is the technology incubator for safety and sustainability", said Bunce.



PHOTO: CIRRUS AIRCRAFT

A total of 294 piston-powered aeroplanes were delivered globally in the first quarter of 2023

Molly Rose Scholarship open for applications

The 2023-24 Attagirls Molly Rose Pilot Scholarship will be open for applications between 1 June and 30 November 2023. The award aims

to help young women considering a career in aviation (particularly as a pilot) and is named after Molly Rose, the WWII Air Transport Auxiliary pilot.

The winner of the scholarship will receive full funding for a Private Pilot's Licence (PPL) course. Applications should be sent to

scholarship@aetheris.co.uk, while more information can be found on the website www.aetheris.co.uk under the 'scholarship' section.

Electronic Conspicuity rebate extended

The scheme that allows pilots to obtain EC (Electronic Conspicuity) devices at greatly reduced cost has been extended by the Department for Transport. The rebate scheme was set up to encourage the widespread adoption of EC devices within the UK's General Aviation and Unmanned Aircraft Systems (UAS) communities. The DfT is providing the funds, which the CAA is distributing via a rebate scheme.

Although the scheme was originally

scheduled to have closed by now (and has already been extended), the CAA has announced it will remain open to applications until 31 March 2024, or until the funding is exhausted. Those meeting the requirements can claim a 50% rebate of the purchase cost of an EC device to a maximum of £250 (including VAT), per applicant. Ground system components do not qualify for this scheme, as the funding is for carry-on or aircraft-fitted devices only. To qualify, applicants must be

UK residents and hold at least one UK issued pilot licence, or be a registered member of the British Gliding Association holding a current 'Pilot' or 'Club Pilot' rating, or a registered pilot of the Association of Paragliding Pilots and Instructors (APPI). UAS/UAV operators must hold an authorisation issued specifically by the CAA.

For further details on eligibility and how to apply, login or register for an account on the CAA online customer portal.

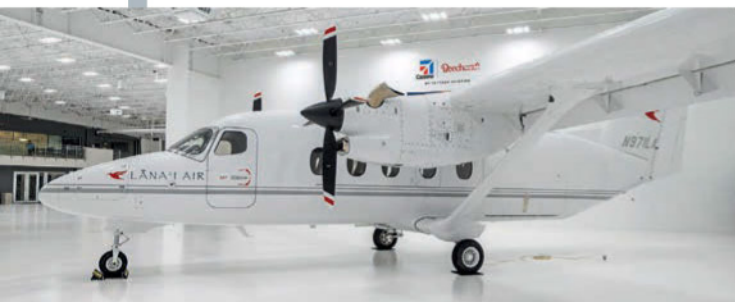
Passenger SkyCourier enters service

The first passenger model of the Cessna SkyCourier twin-engine turboprop has been delivered to Western Aircraft Inc, which operates in Hawaii as Lāna'i Air. The company offers luxury air service connecting Oahu to the island of Lāna'i.

"The SkyCourier is highly versatile, with cabin flexibility, payload capability, performance and low operating costs, and has already proven to be popular around the world" said Lannie O'Bannion, senior vice president of Sales at Textron Aviation. Designed with serviceability as its

primary guiding principle, the SkyCourier features simple systems and easy access points throughout the aircraft for easy maintenance.

Cessna also developed a way to convert the aircraft from a 19-seat passenger configuration to cargo configuration using patent-pending quick release seats and removable bulkheads. The passenger variant includes crew and passenger doors for smooth boarding, as well as large cabin windows for natural light and views. Both configurations offer single-point pressure refuelling to enable faster turnarounds.



The SkyCourier can be quickly converted from a 19-seat passenger configuration to a cargo configuration

Ryanair places giant order



The order is good news for aspiring pilots, as Ryanair has historically timed its orders correctly in anticipation of traffic surges

Aspiring airline pilots can take comfort in the news that Ryanair has placed its largest order ever, announcing that it will buy three hundred 737 MAX. The Irish carrier, which has historically timed its orders very well in anticipation of traffic surges, is signing an agreement for 150 new Boeing 737-10 jets and placing option orders for 150 more.

"We expect half of this order will replace older NGs, while the remaining 150 aircraft will facilitate controlled, sustainable growth to just over 300 million guests per annum by 2034" said Michael O'Leary,

Ryanair's Group CEO. "In addition to delivering significant revenue and market growth opportunities across Europe, we expect these new larger, more efficient aircraft to drive further unit cost savings, which will be passed on to passengers in lower air fares," he added.

"The Boeing-Ryanair partnership is one of the most productive in commercial aviation history, enabling both companies to succeed and expand affordable travel to hundreds of millions of people," commented Boeing President and CEO Dave Calhoun.

PHOTO: BOEING

PHOTO: TEXTRON AVIATION

Highland Council-owned airfields under threat

The future of three Scottish airfields owned and operated by the Highland Council is under threat. Ashaig Airfield on the Isle of Skye, Dornoch on the east coast of the Highlands and Plockton on the west coast all face indeterminate outlooks.

A report by the Highland Council into the current and projected usage of the three airfields concluded that a return of commercial air traffic is a possibility for Ashaig, as Loganair used to run a service from Skye to Glasgow between 1972 and 1988. However, currently it is only used by light aircraft and emergency services. Dornoch Airfield is a grass strip close to the small town of Dornoch, and it is claimed that there is interest from at least two parties, one community-based

and one commercial operator, in taking on a lease at the airfield. Unfortunately, the Highland Council's report recommends that 'should no such agreement be reached within the 2023/24 financial year, the Council should cease active operations at Dornoch Airfield and seek alternative uses for the site.'

Plockton Airfield, which is currently leased by PDG Helicopters, is a favourite stop for pilots flying along the west coast of Scotland. It boasts a stunning location close to the sea with spectacular views. It was sold by the National Trust for Scotland (NTS) to the Highland Council in 1980, with the caveat that the land could only be used as an airfield. The NTS has a right to buy back the airfield if the Council wishes to dispose of the asset.

Aerobility ball on 18 November

The 2023 Aviators Ball hosted by Aerobility will take place on Saturday, 18 November 2023, at the Terminal 5 Hilton Hotel at Heathrow. The Ball will mark thirty years of Aerobility making the dream of flying possible for disabled people. All proceeds will go towards the charity's mission.

Two thousand PC-12s

Swiss manufacturer Pilatus handed over its 2,000th PC-12 during a ceremony at the company's headquarters in Stans last month. A single-engine turboprop, the first PC-12 was delivered in 1994 and the 2,000th went to New Hampshire-based fractional aircraft ownership company PlaneSense, which operates a fleet of forty-three PC-12s. The global PC-12 fleet has now logged more than ten million flight hours.

Denali to have Garmin Autoland

Beechcraft's Denali single-engine turboprop will have Garmin's

Collier Trophy-winning Emergency Autoland system as a standard

feature when the model enters service, according to Beechcraft's parent company Textron Aviation. The system, which is designed to land the aircraft autonomously if the pilot is incapacitated, is being integrated into the Denali's development and flight test programme. The three Denali aircraft in flight test have logged over 1,300 flight hours to date. Launched in 2016 and

originally branded as a Cessna product, the Denali will offer a cruise speed of 285kt, 1,600nm range and a full fuel payload of 500kg. It is powered by the GE Catalyst engine, which is also still in development, and comes equipped with the Garmin G3000 avionics suite. Certification of the engine is currently expected in 2024 with type certification of the aircraft to follow in 2025.



Textron expects the Denali to be certified in 2025

PHOTO: TEXTRON AVIATION

American GA airports to receive \$20m

GA airports in the USA will receive around \$20m to improve facilities and infrastructure as part of the Biden administration's infrastructure funding programme. Most of the grants are in the \$500,000-to-\$1m range and will be used to upgrade existing

facilities, ranging from lights to communications systems – although, where appropriate, completely new air traffic control towers will be built.

"Airports aren't just travel hubs, they are important job centres and economic engines—especially

in smaller communities," said US Transport Secretary Pete Buttigieg. "We're proud to deliver these investments, which will help us improve safety at airports and support local economies for decades to come."

Citation Ascend unveiled

Textron Aviation unveiled the newest Cessna Citation business jet in the 560XL series, the Cessna Citation Ascend. The Ascend is designed to bring an entirely new cockpit, improved performance and a more luxurious cabin to the midsize business jet market.

Currently under development, the aircraft is expected to enter service in 2025. Preliminary performance targets indicate a four-passenger range of 1,900nm at high-speed cruise power, a cruise speed of 441kt and the ability to climb directly to 45,000ft.



The Citation Ascend has a completely re-designed cockpit and will feature an auto-throttle

PHOTO: TEXTRON AVIATION

Talon test successful

California-based Stratolaunch, which operates the world's largest aircraft, the Roc, has conducted the first separation release test using its TA-0 Talon-A test vehicle. The four-hour mission launched from California's Vandenberg Space Force Base and demonstrated that, according to the company, the Talon-A launch system 'can cleanly and safely separate hypersonic vehicles from Roc's centre-wing pylon'.

"Today's test was exceptional," said Stratolaunch CEO and President Zachary Krevor. "Our hardware and data collection systems performed as anticipated, and we now stand at the precipice of achieving hypersonic flight." Designed for use as a reusable autonomous hypersonic test bed, Stratolaunch's Talon-A is expected to be able to reach speeds above Mach 5.

Missed MAX chances



PHOTO: BOEING

A Lion Air 737MAX crashed off the coast of Indonesia in October 2018

The aviation news portal AVweb reported that senior FAA officials overruled their own engineers in the wake of the two Boeing 737MAX crashes which eventually led to the grounding of the whole fleet. Engineers had called for the immediate grounding of the jetliner after the second fatal crash in five months in Ethiopia in March of 2019.

The Transportation Department's Office of Inspector General said in a report that the engineers immediately noticed the similarities between the Ethiopian Airlines crash and one in October of 2018 involving a Lion Air MAX off Indonesia. 'Yet agency

officials at headquarters and the Seattle ACO [Aircraft Certification Office] opted not to do so', said the report.

The FAA was the last national aviation regulator to ground the type, which it did on 13 March, three days after the Ethiopian crash. A total of 346 people died in the two crashes, which occurred when spurious data from a malfunctioning angle of attack sensor caused the Manoeuvring Characteristics Augmentation System (MCAS) to trim the aircraft into high-speed dives. The grounding lasted twenty months and resulted in changes to MCAS and the angle of attack systems.

Dassault bizjet 60th

Dassault celebrated the 60th anniversary of its business jet line in May, the original Dassault bizjet having completed its inaugural flight on 4 May 1963. Initially branded as the Mystère 20 before being renamed the Falcon 20,

the product line of the company includes twenty-seven different model types with more than 2,700 aircraft delivered. The bestselling model has been the Falcon 2000 with almost 700 delivered followed by the Falcon 900 with over 550.

DeltaHawk's DHK180 certified

DeltaHawk Engines, which has been working on its Jet-A1 fuelled piston engine for several years, has gained FAA certification for its 180hp DHK180 powerplant. This is the first in a planned series of engines from the

Wisconsin-based company, and is a liquid-cooled, direct-drive inverted V-4 which features both turbocharging and supercharging, and mechanical fuel injection. Dry weight of the engine is 162kg, including the starter,

turbo, exhaust, and alternator.

The company claim its clean-sheet design has 40% fewer moving parts than other engines in its category and provides appreciably more torque while burning significantly less fuel.

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Airfields

What's happening at our airfields, aerodromes & airports

Doncaster Sheffield Airport down but not out

The City of Doncaster council, supported by local MPs, is examining ways to protect Doncaster Sheffield Airport's infrastructure while it remains closed, with an eye to potentially reopening it in the future. One measure

being considered is to make planning permission mandatory before any building work can start. The application of a planning tool – known as an 'Article 4 Direction' – could be made with immediate

effect if approved. Once established, this would assist in preserving the airport's runway and infrastructure, making a relatively swift return to operations considerably more viable.

The council is also considering various other ways to secure the airport's future, and on 5 May,

Mayor Ros Jones said that a Compulsory Purchase Order is possible "if all other avenues are exhausted". In a statement, the council said it "aims to see the airport reopen and grow a cluster of businesses and commercial activity that complements traditional aerospace functions".



PHOTO: AIRBUS

Wizzair left its Doncaster base in July 2022

Compton Abbas re-opens to visitors

The spectacular Dorset airfield of Compton Abbas officially re-opened to visitors in May, having been closed to visiting aircraft for several months while extensive refurbishments to the café and clubhouse were undertaken. The airfield was sold by long-term owners the Hughes family

to Ashcombe Estates Ltd, which is owned and operated by noted film director Guy Ritchie. The new owners took over the airfield on 1 February 2023, and soon set about improving the restaurant and club house.

One facet that certainly everyone at *Pilot* approves of (as we

approach the longest day) is that the management has confirmed that as long as you arrive before the airfield closes at 1700 Tue-Sun, you may depart after 1700, albeit without AGCS or fire cover and having informed Operations of these intentions when you PPR.

Hangar Homes at Ronaldsway?

The Isle of Man Airport is considering having mixed-use hangars (essentially commercial and residential use), according to Peter Day, whose company Hangar Homes has been trying to build mixed-use hangars at Solent Airfield for some time, and has also been considering a development at Enniskillen in Northern Ireland.

According to Peter, as the airfield is "over the road from a lovely small harbour and within walking distance of a golf course and a fabulous



The Isle of Man Airport is within walking distance of a golf course and a beach

beach, Manx Aeropark has to be one of the best locations in the UK to live and run a business, not least because of the Isle of Man's attractive tax status with 0% Corporation Tax, 0% Inheritance Tax and only 10% Standard (20% Higher Rate) Income Tax.

Before moving forward on this exciting project, the Isle of Man Development Corporation and the airport need to know the level of demand from businesses (not just aviation-related) that would use a light aircraft from one of these units.

Flight training

News from the clubs, schools & ATOs

FTA Global goes into administration

Hot on the heels of Tayside Aviation failing (see last month's 'Notes') another large flight training school has gone into administration. Messages posted on social media on 23 May indicated that Brighton Airport-based FTA Global had ceased trading with immediate effect, although, interestingly, there was no mention of the company's

failure on its website.

Pilot has contacted FTA Global but, as yet, has received no reply. It appears that once again many students who paid 'up-front' will be thousands of pounds out-of-pocket, as in one of the messages posted on social media the company made it clear that it 'is not in a position to make any immediate refunds'.

ALSIM ALSR20 gains EASA certification

ALSIM has announced that Germany-based School4Pilots has obtained FNPT II simulator qualification for its ALSIM ALSR20. School4Pilots is the first operator of an EASA-certified ALSIM ALSR20 simulator in the EASA region. The ALSR20 is the brand-new simulator manufactured by ALSIM and is an exact replica of the Cirrus SR20 aircraft. This Flight Training

Device (FTD) Level 5 is specifically designed for PPL and IR training needs, and reproduces the Cirrus SR20 specific interior cockpit and flight deck. It is fitted with a Garmin GDU 1050A and GFC 700 Autopilot, a GMA 350C all digital audio panel and a Garmin GCU 479. The device can also simulate the Cirrus Airframe Parachute System (CAPS).



PHOTO: ALSIM

The ALSR20 simulator is an exact replica of the Cirrus SR20's cockpit and can even simulate the Cirrus Airframe Parachute System

BGA to issue Sailplane Pilot Licences

The British Gliding Association (BGA) will begin making recommendations to the UK CAA (Civil Aviation Authority) regarding the issuing of Sailplane Pilot Licences, having recently been granted Delegated Authority status by the CAA. The CAA has been working with the BGA to create the necessary measures for the approval, although it should be noted that the BGA can't actually issue SPLs itself, because the law requires licences dispensed under the UK Basic Regulation to be issued by the CAA. This development enhances

the BGA's existing approvals, which allow it to assess applications regarding the issue of authorisations, certificates, and ratings, along with assessing applications for the issue of a Sailplane Pilot's Licence on the basis of a pilot previously holding a BGA Certificate.

The CAA and BGA will now work together towards implementing the Sailplane Pilot's Licence, as recently announced in CAP2532 *GA Pilot Licensing & Training Simplification*. The BGA's chief executive officer Pete Stratten said, "delegation is an

important enabler for GA, and we welcome this development. We look forward to continuing to provide a great service to the gliding community supported by this approval."

Michael MacDonald, co-head of General Aviation and RPAS Unit, at the CAA, added, "we welcome the opportunity of working more closely with the BGA as part of this enhanced delegation decision. This is an important part of the General Aviation change programme and one we are pleased to see has come to a mutual agreement."

New Citation sim for Farnborough

Textron Aviation has announced expanded support for business jet customers in Europe with the addition of a new Cessna Citation CJ3+/Cessna Citation M2 Gen2 Convertible Full-Flight Simulator in the region. The new simulator is scheduled to be ready

for training at FlightSafety International's Farnborough facility by January 2025.

The new simulator is designed and manufactured by TRU Simulation + Training and equipped with the latest Garmin G3000 avionics. It features genuine aircraft components throughout the

cockpit, ensuring an accurate representation of the jet, and incorporates TRU's third-generation control loading system to produce a highly realistic flight experience. The full-motion of the simulator integrates TRU's REALCue system, which uses an electric motion base with

106cm-stroke actuators. The visual system is equipped with FlightSafety's VITAL 1150 Image Generation system, a large array of high-resolution airfield models and high-definition projectors on a 200×40 degree display, creating an immersive training environment.

Rotorheads

The latest news from the world of rotary-wing aviation

Spanish Air and Space Force gets H135s

Airbus recently delivered the first H135 to the Spanish Air and Space Force in Albacete. This is the eighth helicopter delivered under the 36-unit contract signed at the end of 2021 to supply the Armed Forces and State Security Forces, and is six months ahead of schedule.

Its early delivery will facilitate crew training and the entry into service of the H135 for the 78th Wing at the Military School of Helicopters in Armilla, Granada, where it will perform advanced training tasks for military

pilots. Once the planned fleet of eleven H135s are delivered to the Air Force, it will become the primary helicopter for pilot training for the Spanish Air Force, Army, Navy, the Guardia Civil, and other countries requesting such training at the Granada base.

The type is already in service with the Spanish Army's training unit (ACAVIET) and the Emergency Battalion (BHELEME II). In the coming months, the Spanish Navy will also receive the first of its seven H135s from the same contract.



Airbus delivered the first H135 to the Spanish Air and Space Force six months ahead of schedule

Kakao Mobility orders Vertical VX4s



PHOTO: VERTICAL AEROSPACE

South Korea's Kakao Mobility has pre-ordered up to fifty Vertical VX4 aircraft

Vertical Aerospace has announced that South Korean mobility technology company, Kakao Mobility, has pre-ordered up to fifty of Vertical's VX4 aircraft, adding South Korea to Vertical's list of customer launch markets.

Kakao Mobility is the largest Mobility-as-a-Service (MaaS) platform in South Korea and has more than thirty million registered users. It is the mobility subsidiary of South Korean internet giant, Kakao Corporation, and runs the country's most popular taxi-hailing app, Kakao

T, providing taxi-hailing, designated driver booking, parking space search, and Kakao Navi app providing real-time traffic information services.

Vertical and Kakao Mobility will establish a Joint Working Group (JWG) to drive the commercialisation of AAM (Advanced Air Mobility) services in South Korea, including the exploration of network and fleet planning, infrastructure requirements, regulatory development, and consumer awareness of eVTOL mobility solutions.

Bell delivers down under

Bell Textron Inc. has announced it has delivered seven Bell 407GX helicopters to Australian customers across various segments in the last twelve months. Of the seven, five were delivered to Nautilus Aviation for tourism and utility flights. The remaining two were delivered to a leading Australian utility company and a corporate customer

respectively. With these deliveries the number of Bell 407 helicopters operating in Australia is now more than twenty.

The 407GX is fitted with Garmin's advanced G1000H NXi Flight Deck, and the helicopter's three-axis autopilot recently received certification from the United Kingdom's Civil Aviation Authority.



PHOTO: BELL HELICOPTERS



PHOTO: AIRBUS HELICOPTERS



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Autonomous operations from a ship at sea

PHOTO: AIRBUS HELICOPTERS



The Airbus DeckFinder system allows the autonomous launch and recovery of unmanned aerial vehicles operating from ships at sea

Airbus Helicopters and the French Armament General Directorate (DGA) has tested the unmanned aerial system (UAS) VSR700 for the first time in an operational configuration from a ship at sea. At the beginning of May, the VSR700 performed eighty fully autonomous takeoffs and landings from the helicopter deck of a civilian vessel cruising off the coast of Brittany.

"This flight test campaign was an important step for the VSR700 programme as it allowed us to validate the excellent performance of the drone in operational conditions, which were representative of its future missions," said Nicolas Delmas, Head of VSR700 programme at Airbus Helicopters. "The VSR700 prototype opened its flight envelope in winds above 40 knots, accumulated eight hours of testing in 14 flights, and made successful landings in several different sea states," he added.

In 2022, the autonomous takeoff and landing capabilities of the VSR700 were tested from the same vessel using an optionally piloted vehicle (OPV) based on a modified Guimbal Cabri G2 equipped with the autonomous

takeoff and landing (ATOL) system developed for the VSR700. This time the test campaign took place with the SDAM (Système de Drone Aérien pour la Marine) demonstrator and fully validated the capabilities of the system.

Autonomous takeoff and landing capabilities are a key asset of the VSR700 and are made possible with the use of the Airbus DeckFinder system. This enables autonomous launch and recovery of unmanned air vehicles (UAVs) with an accuracy of 10-20cm during challenging operations in harsh environmental conditions, independently of GNSS/GPS and regardless of degraded visual conditions. As well as the handling qualities of the aircraft, the capabilities of the sensors, including a maritime surveillance radar, an electro-optical sensor, and an AIS (Automatic Identification System) receiver were also evaluated.

The next development steps will see the second VSR700 prototype perform its maiden flight ahead of flight testing onboard a French Navy FREMM (multi-purpose frigate) later this year.

Robinson Helicopters hits first half-century

June 2023 marks fifty years in business for the Robinson Helicopter Company. Founded by Frank Robinson on 20 June 1973, Robinson's goal was to design and manufacture simple, reliable helicopters, as efficiently as possible without compromising quality. Robinson's first machine, the two-seat R22 was certified by the FAA in 1979, and marked the beginning of a new generation of helicopters. This relatively simple, affordable machine made rotary-wing flight training cheaper and private helicopter ownership possible, and by 1988 the R22 was the world's top-selling civilian helicopter.

In the '90s, after the R22's remarkable success, and realizing the potential for a light mid-size helicopter, Robinson introduced the four-seat R44. This machine soon became as successful as the -22, and in 2010 Robinson expanded its product line with the five-seat, turbine powered R66. In 2021, sales of the R66 surpassed those of the popular R44 Raven II. There are now more than 13,000 Robinson helicopters operating worldwide.

PHOTO: ROBINSON HELICOPTER COMPANY



More than more than 13,000 Robinson helicopters have been produced by the company during the last fifty years

New regs

Compiled by Howard J Curtis

New & restored registrations

REGISTRATION // PREVIOUS IDENTITY // TYPE // OWNER/OPERATOR

G-BFPZ	N56PZ	Reims Cessna F177RG	G E Thompson, Barton-upon-Humber
G-BKAE	F-BKCE	Jodel D120 Paris-Nice	C A Husain, Chatteris
G-BVHT		Avid Speedwing Mk4	K Redfearn, Bishop Auckland
G-CKWS	LN-FNG	Boeing 787-9	Norse Atlantic UK Ltd, Gatwick
G-CLYB	D-KLYB	Schempp-Hirth Ventus-3F	R C Bromwich, Blandford Forum
G-CMIW	C-FEEF	Stinson L-5 Sentinel	Stinson L-5 Group, Aylesbury
G-CMJE		Diamond S120 HAB	A M Holly, Berkeley
G-CMLF		Diamond S105 HAB	A M Holly, Berkeley
G-CMLP		Airbus Helicopters EC130 T2	Airbus Helicopters, Marseille, France
G-CMLR		Cameron Z-105 HAB	The Royal Crescent Hotel & Spa, Bath
G-CMNS		Virus SW 127 BCAR-S	Fly About Aviation Ltd, Beccles
G-CMNV	LN-ONN	Sikorsky S-92A	Bristow Helicopters Ltd, Aberdeen
G-CMNZ	C-GIST	Chilton DW1A	R Hodgson, Guildford
G-CMPM		Flylight Skyranger Nynja	J D Fielding & J C Mundy, Norwich
G-DANO	G-BNRY	Cessna 182Q Skylane	D T Pangbourne, London
G-DHLV		Boeing 777F	DHL Air Ltd, East Midlands
G-DMAM		Schleicher AS 33 Es	J W White, Aylesbury
G-DTSI		Sling 4 TSI	G L Davies, Huddersfield

G-EHLE		Ikarus C42 FB100 Charlie	E Hardiman, Peterlee
G-EJCC	OE-LDY	Airbus A320-214	easyJet Airline Company Ltd, Luton
G-EJCJ	OE-IZE	Airbus A320-214	easyJet Airline Company Ltd, Luton
G-EJCK	OE-IZO	Airbus A320-214	easyJet Airline Company Ltd, Luton
G-EJCO	OE-IZP	Airbus A320-214	easyJet Airline Company Ltd, Luton
G-GCRM	G-UPRT	Slingsby T67M 260 Firefly	CRM Aviation Europe Ltd, White Waltham
G-IROI	G-KIMH	RotorSport UK MTOsport	P B Harrison, Wirral
G-JKJA	2-JDEJ	Agusta A109E	MyHeli Ltd, Oxford Airport
G-JZBW	LN-RRG	Boeing 737-85P	Jet2.com Ltd, Leeds
G-MICB		Exodus Deltajet 500	B Michnay, Rickmansworth Stingray
G-MKVB	BM597	Supermarine Spitfire LFVb Aerial Spitfire Icons Mk 5 Pty Ltd, Richmond	
G-MNNM		Mainair Scorchers	S R Leeper, Norwich
G-MSHP		Piper PA-46-600TP	United E Ltd, Royston
G-NCKK		Pegasus Sport QuickR	N C Farley, Warminster
G-OHJK	EL-HJK	Boeing 737-82R	ASL Airlines UK Ltd, East Midlands
G-OWDY		Vans RV-7	Cloud Surfers Ltd, Pulborough
G-PAID		Ultramagic M-65C HAB	J W Tyrrell, Stourport-on-Severn
G-RCRM	G-BWXF	Slingsby T67M 260 Firefly	CRM Aviation Europe Ltd, White Waltham
G-REZA		Skyranger Swift 912S(I)	R-A Khosravi, Norwich
G-RVAG		Vans RV-8	G P Howes, Bury St Edmunds
G-RVBA		Vans RV-8A	D P Richard, Pulborough
G-STJP		TL 2000 Sting S4	J M Palmer, Huntingdon
G-TAWK	C-FLWK	Boeing 737-8K5	TUI Airways Ltd, Luton
G-TAWS	C-FANS	Boeing 737-8K5	TUI Airways Ltd, Luton
G-TEKE		Tekever AR5 Evolution 2.3	Tekever Ltd, Southampton
G-TEKG		Tekever AR5 Evolution 2.3	Tekever Ltd, Southampton
G-THRN		Flylight Adam	D G Thomas, Pontypool
G-TJFF		VR Plus/Adam Trike	A J Fillingham, Lancaster
G-TTNU	F-WWIF	Airbus A320-251N	British Airways PLC, Heathrow
G-TUMA	C-FDNA	Boeing 737-8MAX	TUI Airways Ltd, Luton
G-TUMN	C-FIRN	Boeing 737-8MAX	TUI Airways Ltd, Luton
G-UNER		Lindstrand LBL 90A HAB	J F Weller, Nottingham
G-WOFT	2-LIFT	Agusta A109E	Voler Aviation Services Ltd, Kemble
G-ZEAA	OE-FXX	Diamond DA 62	Ampa Ltd, London

PHOTO: HOWARD J CURTIS



Having been cancelled by the CAA in February 2023, it is pleasing to report that Spitfire LF Vb G-MKVB has been restored to the register, under a new owner, in May 2023. A combat veteran, BM597 spent many years on the gate at Church Fenton before being restored to fly and repainted in the colours of No 317 Squadron RAF as seen here.

PHOTO: PETER R MARCH



Robin HR200/120B G-BYSG returned to its native France in recent months and was photographed with the familiar backdrop of the buildings at Compton Abbas in the background, in August 2017. With the re-opening of the airfield in recent weeks, it is hoped that it won't be long before similar scenes will once again be recreated.

PHOTO: HOWARD J CURTIS



For TUI, this month once again records 737s on the move, with four ex Canadian aircraft returning from lease and one, G-FDZT, heading off to Transavia France as F-HUYS. It was photographed wearing small TUI titles when departing from Manchester on a typical October day in 2013.

PHOTO: HOWARD J CURTIS



After many years of being parked at Bournemouth while out of use, Cessna 550 Citation Bravo G-IKOS, photographed in December 2019, was finally sold in early May to an owner in Petersburg, Virginia, as N998RH.

PHOTO: HOWARD J CURTIS



1970-vintage Beech F33 Bonanza G-BGSW was removed from the UK register as cancelled by the CAA on 9 May 2023. As can be seen in this image, taken at Bournemouth during April 2023, the aircraft has been dismantled.



PHOTO: PETER R MARCH

It may be a surprise to learn that even with the cancellation of G-BUDC from the register in April 2023, there are still 33 Venture T2s registered. Many are still in the colours they wore when in the hands of Air Cadet Gliding Schools, as indeed was G-BUDC when photographed at Fairford in 2011.

Cancellations

G-ATAU	Druiene D.62B Condor	Destroyed
G-AVRK	Piper PA-28-180 Cherokee	Permanently withdrawn from use
G-AYAC	Piper PA-28R-200 Cherokee Arrow	Transferred to New Zealand
G-AYUP	Slingsby T61A Falke (modified)	Cancelled by the CAA
G-BAEE	Jodel DR1050-M1 Sicile Record	Crashed at Jackrells Farm, Sussex, 6 October 2022
G-BFPZ	Reims Cessna F177RG	Cancelled by the CAA
G-BGSW	Beech F33 Bonanza	Cancelled by the CAA
G-BMDD	Cadet Motor Glider	Cancelled by the CAA
G-BNRY	Cessna 182Q Skylane	Re-registered G-DANO
G-BSXM	Cameron V-77 HAB	Permanently withdrawn from use
G-BUDC	Slingsby T61F Venture T Mk 2	Cancelled by the CAA
G-BUIZ	Cameron N-90 HAB	Permanently withdrawn from use
G-BUXK	Pietenpol Air Camper	Transferred to Lithuania
G-BVDX	Cameron V-90 HAB	Permanently withdrawn from use
G-BWXF	Slingsby T67M 260 Firefly	Re-registered G-RCRM
G-BWXV	Slingsby T67M 260 Firefly	Transferred to Republic of Ireland
G-BXYF	Colt AS-105 GD HAB	Cancelled by the CAA
G-BYLT	X'Air 582(I)	Cancelled by the CAA
G-BYSG	Robin HR200/120B	Transferred to France
G-BZBP	X'Air 582(5)	Cancelled by the CAA
G-BZDE	Lindstrand LBL 210A HAB	Cancelled by the CAA
G-BZUZ	Hunt Avon-Blade R100(I)	Cancelled by the CAA

G-CBOC	X'Air 582(5)	Transferred to Republic of Ireland
G-CBST	Bell 412EP	Transferred to Canada
G-CBWT	Bell 412EP	Transferred to Canada
G-CBXL	Bell 412EP	Transferred to Canada
G-CEDF	Cameron N-105 HAB	Permanently withdrawn from use
G-CFYE	Scheibe Zugvogel III B	Permanently withdrawn from use
G-CGGD	Aérospatiale AS365N2 Dauphin II	Transferred to France
G-CGWM	Dragonfly Lite	Cancelled by the CAA
G-CHVC	Cameron C-60 HAB	Transferred to Belgium
G-CJGA	Cameron Z-90 HAB	Transferred to Italy
G-CUCU	Colt 180A HAB	Cancelled by the CAA
G-DEJD	Slingsby T65D Vega	Cancelled by the CAA
G-EIRH	Airbus A321-253NX	Transferred to Republic of Ireland as EI-LRH
G-ENNV	Aeroprakt A32 Vixen	Crashed at Newtownards, 19 July 2022
G-ERMY	Ultramagic N-210 HAB	Transferred to Switzerland
G-FDZT	Boeing 737-8K5	Transferred to France as F-HUYS
G-FRYL	Raytheon 390	Transferred to USA as N28JV
G-GGGR	American Eurocopter AS350B3	Transferred to Canada as C-FBPQ
G-IKOS	Cessna 550 Citation Bravo	Transferred to USA as N998RH
G-JAFT	Diamond DA 42 Twin Star	Transferred to Republic of Ireland
G-JAES	Bell 206B Jet Ranger III	Transferred to San Marino
G-JERO	Europa XS	Cancelled by the CAA
G-JHEX	Cessna 550 Citation Bravo	Transferred to USA as N550TT
G-JMCM	Boeing 737-3Y0	Transferred to Panama
G-KIMH	RotorSport UK MTOsport	Re-registered G-IROI
G-KMBB	Scheibe SF25D Falke	Cancelled by the CAA
G-MCSA	Sikorsky S-92A	Transferred to Canada
G-MNNM	Mainair Scorcher	Cancelled by the CAA
G-MNZP	CFM Shadow Series BD (modified)	Permanently withdrawn from use
G-MTDK	MW5B Sorcerer	Cancelled by the CAA
G-MTVH	Mainair Gemini Flash IIA	Cancelled by the CAA
G-MWMH	Powerchute Kestrel	Permanently withdrawn from use
G-MZAE	Mainair Blade (Modified SS)	Cancelled by the CAA
G-MZAZ	Mainair Blade (Modified SS)	Cancelled by the CAA
G-MZEX	Pegasus Quantum 15	Cancelled by the CAA
G-OXBY	Cameron N-90 HAB	Permanently withdrawn from use
G-POWS	Boeing 737-436	Transferred to USA as N853AT
G-RVNO	Piper PA-34-200T Seneca II	Permanently withdrawn from use
G-SHRD	Eurocopter AS350B2 Ecureuil	Transferred to USA
G-TSUN	Hawker 750	Transferred to Guernsey
G-UPRT	Slingsby T67M 260 Firefly	Re-registered G-GCRM
G-VONS	Piper PA-32R-301T Saratoga IITC	Transferred to Austria
G-WHSA	MBB-BK 117 D-2	Transferred to Brazil
G-XYZT	Aeromot AMT-200S Super Ximango	Transferred to Germany

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75 years of Pascale aircraft

Europe's leading general aviation manufacturer, family owned Italian company Tecnam celebrates 75 years of Pascale-designed aircraft

Words: Philip Whiteman

Photos: Costruzioni Aeronautiche TECNAM S.p.A

Early in May, Europe's leading light aircraft manufacturer gathered two hundred guests at its base in Italy for a glorious gala dinner celebrating 75 years of Pascale-designed aircraft, originally produced by Partenavia and made since 1992 by Tecnam, also owned by the Pascale family. Those invited

for the dinner and the factory tour that preceded it included agents, dealers and customers from all around the world, as well as journalists and editors from the aviation media.

From an early age brothers Giovanni and Luigi Pascale had been interested in aviation and, like so many young men of the 1930s, were keen model





▲ Tecnam magicked a P-Mentor fresh off the production line into the castle courtyard where the anniversary dinner was staged. The food was fantastic and the speeches went on long into the night

▲ 'Gino' and Luigi Pascale bought four or five scrap US Liaison aircraft engines at fifty lira per kilo to make one working unit for their first aeroplane design, the P48 Astore

aircraft builders. They progressed on to designs of their own and during WWII produced their first full-size aircraft, a glider. Sadly, this was destroyed when the church it was housed in was hit in Allied bombing of the area around Naples, where the Pascale family lived.

After the war, some of the Allied 'swords', in the form of military vehicles and equipment, were made into ploughshares by resourceful Italians. In the north, Ferruccio Lamborghini adapted jeeps and trucks for agricultural

use before making his own tractors and – famously – sports cars; in the south, Giovanni and Luigi combed through the salvage yards gathering scrap Continental A65 engines to build a working unit to power their first aeroplane, the P48 Astore ('P' for Pascale, and '48' the year of design).

Towed to the airfield behind a scooter, the P48 was assembled for its first flight with Italy's famed Schneider Trophy and test pilot Mario de Barnadi at the controls. The aircraft was a technical

success but the market for low-powered training aircraft was not strong, and the brothers moved on to designing and flying (they both became pilots) some outstanding racing aircraft, notably the P55 Tornado, for wealthy individuals. It was on the success of this design that the two brothers established Partenavia, combining the ancient Greek name for Naples, Parthenope with *aviazione*.)

In time, the market for larger training and touring aircraft developed, the Pascale brothers' Partenavia designs



▲ Hot ship – a one-off that established the Pascale brother's design credentials, the all-wood, retractable undercarriage P55 Tornado won the Giro di Sicilia air race



▲ Designed by Luigi and initially built by Partenavia, the P68 made its first flight on 25 May 1970 and certification was granted on 17 November 1971. Since 1998 it has been produced by Vulcanair

taking the form of fabric-covered and then all-metal models that resembled contemporary Piper high-wingers and Cessnas. Where the Italian company really made its international mark was with the P68 twin, which has enjoyed a production run long beyond family ownership of Partenavia.

The way that the brothers were elbowed out of the company they had founded is a sad story that there's no room to tell here (see tecnam.com/legacy for the whole nine yards). The great thing is that Luigi, by now a distinguished *professore* at the university of Naples, was persuaded in the early 1990s to resume light aircraft design and manufacture by Giovanni's son, Paolo. Together they founded Tecnam, which made its own name with the hugely successful P92 Echo ultralight.

Subsequent models will be well-known to *Pilot* readers, especially the P2002

P-Mentor single-engine IFR trainer and twin-engine P2006T combination that is offered today as a two-model training package for commercial flight training organisations. At Tecnam's Capua base guest journalists including *Pilot's* Editor were treated to a flight in the latest model, the P2012 Traveller – an eleven-seat twin designed for operation from unprepared strips.

Rutted and in places still muddy after winter and spring rain, Capua's 600 metre dirt runway is a good test of any utility aircraft, not least one carrying four-and-a-half hours of fuel and several chunky male journalists among the complement. There were raised eyebrows at the takeoff run,

redolent of driving a Land Rover down a farm lane at eighty, and shallow departure profile with the stall-warner blaring, although test pilot Lorenzo de Stefano assured us all was well. Stuka-like steep approaches, demonstrating the aircraft's military transport-style arrival capability were all taken as good character-forming stuff by the passengers, as was a high-speed flat approach toward looming trees and buildings that just happened to require a go-around in a steeply-banked, low level turn over the factory. We were left in no doubt that the P2012 is a capable, impressively manoeuvrable and very robust aeroplane – and one that will see Tecnam well into the next 75 years.

The great thing is that Luigi was persuaded in the early 1990s to resume light aircraft design



Seen here in its original rather boxy and angular (but very efficient and effective) form, the all-metal P92 Echo – the ultralight made by Tecnam that made Tecnam's name

The impressively capable P2012 Traveller seats eleven and has short-field and unprepared runway capabilities vividly demonstrated at the 75th anniversary event



In its modern form, the P92 Echo MkII has lost some of its pure functionality and utilitarian charm in being sexed-up for modern ultralight buyers' tastes

Guiding Tecnam onward to the next 75 years, CEO and Tecnam co-founder Paolo Pascale Langer and his son, Giovanni who is now MD of the family company



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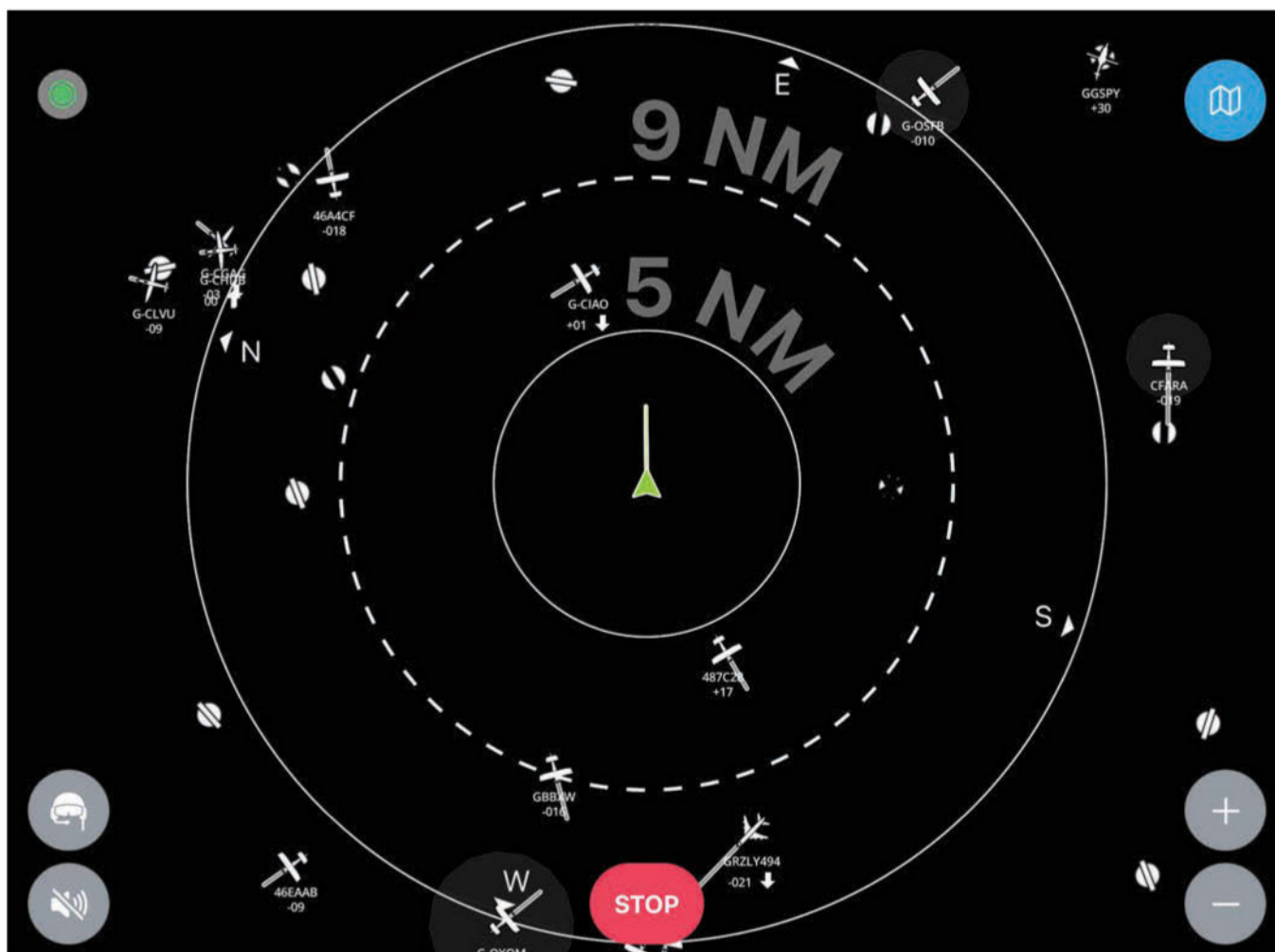
Making it a SafeSky

A free electronic conspicuity and traffic detection app that may win the day in the David and Goliath battle between pilots and innovators, and the aviation authorities

Words: Manuel Queiroz

Don't we love to cheer the small people playing David versus Goliath! Instant smiles and cheers watching the little guy getting the upper hand despite the odds. But in the 21st century things have got very complex – the modern Goliath has extensive R & D departments backed by vast resources and, just as the biblical one, doesn't consider failure. However, the present-day David also doesn't give up easily when faced with a monumental task – and, although just as they were then, his chances are still very poor, he's always willing to have a go!

So, could this ancient conflict be replicated in the age of EC (electronic conspicuity)? We can start by replacing the physical brutality of Goliath, no longer a tyrant, by the dark forces of electronics employed by the mighty US Federal Aviation Authority to keep modern descendants of Icarus from bumping into each



▲ Centred on the user's own aircraft (the green arrowhead) SafeSky's traffic screen shows the identity, position, heading and speed of all aircraft carrying known EC systems, simply based on data received via the user's mobile phone network

other, all this with the blessing of the almighty; the god that is certification. Concurrently, David – clearly reflecting the population explosion – is now represented not by one but by multiple characters beavering away trying to discover that elusive advantage which will be the game-changer.

So then, in this enlightened age, why not just let Goliath be his mighty self and allow David to come up with

something brilliant to align himself with the mighty and powerful? Of course, easier said than done! Many have tried and, as I said in my ADS-B article (*Pilot*, September 2021) no other universally applicable EC solution had been found... Until now! And that solution is SafeSky.

SafeSky was developed by a very small group of Belgian pilots who, although they weren't trying to reinvent the wheel, have found a way to

complement the established systems by using the mobile phone network to detect traffic from sixteen different EC protocols and integrate them to give an unparalleled awareness.

By nature SafeSky has two extraordinary qualities: first it is *free*, something that simply doesn't happen in aviation – if you have a smart phone or a tablet, you can acquire their app and you are then equipped to take advantage of this fantastic (did I mention it is free?) traffic detecting tool; second, because it uses the mobile phone network, it doesn't require transmission or reception within the aeronautical frequencies – not even the hardware already installed in one's aircraft. This last point highlights the ability of staying clear of national authority certification with its lack of flexibility and the authorities' perceived reluctance to fully accept the wider use of multiple detect and avoid systems.

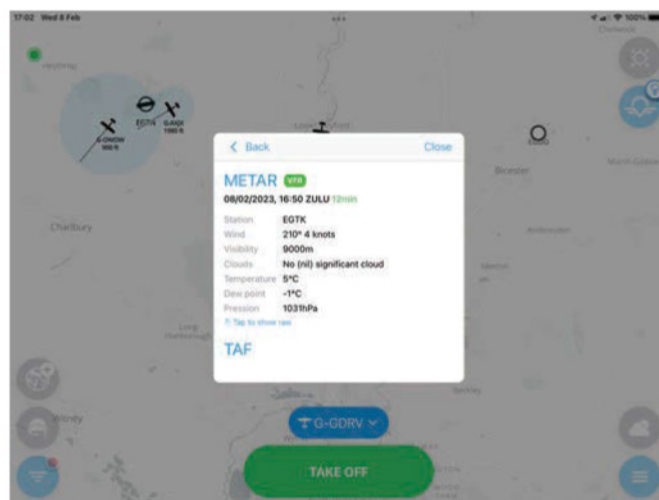
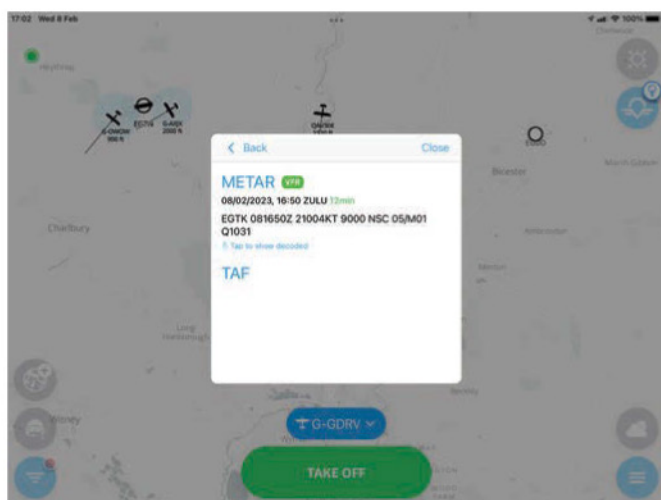
With the cooperation of regulating bodies, systems such as SafeSky could potentially open up areas that are rapidly being swallowed by UAV (drone to most of us) operations to the exclusion of other flyers. An example of this enlightened position can be observed in the Continent, where since 26 January all U (as in UAV) airspace users are required to be equipped



▲ This is what you see when SafeSky gives a proximity warning: the horizontal 'Look out!' sector is highlighted on the main virtual radar display and the target's vertical position is indicated in the panorama window below

▶ Link SafeSky with a GPS nav app like SkyDemon and you have the best of both worlds – SafeSky's traffic information appearing over the navigation map alongside the uncluttered virtual radar display





with EC. This is clearly a vastly different proposition to simply excluding all but UAVs. We can only hope this position will be adopted in the UK – soon.

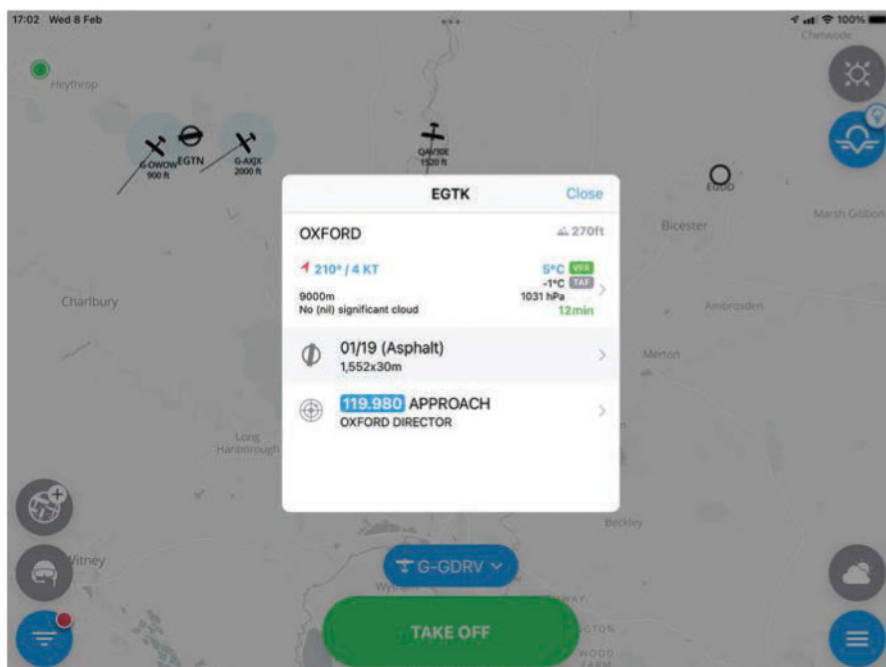
So, in practical terms, how is SafeSky actually going to help us flyers? The most obvious benefit is to extend integrated EC to all aircraft such as paragliders and hang gliders that couldn't previously physically benefit from transponders – not forgetting those that have chosen not to buy one because their cost represents several flying hours. Now everyone can get the free app and broadcast their position as well as seeing others who may not be aware of their presence. And that means 'seeing' users of all manner of EC systems (sixteen at the time of writing), the most obvious ones in the UK being Mode S, ADS-B, Sky Echo, Flarm, PilotAware and, obviously, SafeSky.

There are several other benefits, such as receiving METARs and TAFs while airborne, being able to exchange pre-drafted messages with friends and initiating Search and Rescue when required. To those that wish to even further these capabilities, for a £24.99 annual fee SafeSky can display on your favourite GPS nav app (such as SkyDemon) so traffic can appear in the app's mapping whilst being announced by its audio function, just like any other warning.

Shortcomings? The most significant one is how long it is taking for flyers to take advantage of this development – it is so simple that it is hard to justify *not* using it, as merely enabling SafeSky on your phone prior to flying then



Also displayed by the SafeSky app are METARs and TAFs (and better still, decoded METARs and TAFs) and airfield information



pocketing it without doing anything else will greatly help the safety cause. Your presence will be broadcast and others can keep well clear. (Buzzards and seagulls will have to be excused until suitable equipment is available!)

Now everyone can get the free app and broadcast their position as well as seeing others

Admittedly, our mobile network could be better as anyone venturing away from cities will know, but it is mostly adequate up to 5,000ft as only 2G is required for a successful reception. Just as the best things in life, it isn't perfect – but it is a fantastic tool that

greatly improves safety. It shouldn't replace ADS-B for all the solid reasons this certified system exists, but it is miles better than the alternative – and in the fabled perfect world, having both might be the perfect solution.

Do I hear the traditional reposte of 'nothing compares with the Mk1 eyeball'? Or putting it another way, is the Mk1 eyeball still king? Yes, it is, but please give it all the help you can find.

My advice as a happy user with no connection whatsoever to SafeSky is give it a go – it has to improve safety for all of us and might just save your neck one day. SafeSky to all!

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Hand-flying adventures

I'd like you to know how much I enjoyed reading the May edition of *Pilot*, particularly the articles written by Bob Grimstead, Charlie Huke and flight test editor, Dave Unwin.

Most of my own operational flying, in the RAF, was in the BAe Nimrod, the 'Mighty Hunter' and, like Bob Grimstead, I made a point of hand-flying this 4-jet from takeoff to the top of climb and from top of descent to landing, including an instrument landing approach. Although, on occasion, we would complete a 'run and break' over the airfield to join the visual circuit downwind; bet you haven't done that in a Boeing 707, Bob!

When 'on task' over the sea we were fortunate to have a 'split' autopilot which permitted you to engage the height lock whilst 'driving' the aircraft around the sky, like a motor car, controlling speed with the throttles, four, three, or just two, depending on the weight of the aircraft.

At low weight, after using fuel, or dropping ordnance, the Nimrod could climb on just one of its Rolls Royce Spey engines! Fortunately, we also had a very accurate radio altimeter so that we could set the barometric altimeters to the local QNH. Maritime operations often took place far out to sea, at night, without any lighting, with the aircraft often flying at low level, below 500ft.

Hand flying was essential when completing ship photography, or when hunting submarines

and using the magnetic anomaly detection equipment, the 'stinger' in the tail, or quickly reversing direction, through 180 degrees, for a 'second attack kill' with an air launched, lightweight torpedo.

This latter manoeuvre, the 'Bruce turn' (named after an Australian bush pilot?), is easily flown, with a bit of practice. From the current heading, say north, turn left with 30 degrees of bank, or 45 degrees, if you wish, then after turning through 70 degrees, onto a heading of 290 degrees, smoothly reverse the

turn whilst maintaining constant altitude and the same bank angle. Roll out on the reciprocal of your original heading, in this case 180 degrees, and the aircraft will be pointing at the same feature, on the ground, or a sonobuoy at sea, at which you commenced the manoeuvre.

Dave Unwin, who likes to 'precision park' his glider, may be impressed by the fact that on one occasion, when flying for the police in a BN Islander, I had the aircraft flying backwards at 4kt groundspeed in a strong headwind. Then, on the same flight, I landed and stopped the aircraft on the 'piano keys' on Runway 23 at Teesside International Airport, before turning onto the taxiway at the Alpha 1 holding point, to return to the parking ramp! The story of landing an Islander, at night, on the beach on the island of Barra will have to wait for another occasion!



The cockpit of a Nimrod, circa 1981

Tony Cowan
by email

ATOL-style protection?

Reading the May 23 issue article 'Did the CAA break its own rules?', one has to feel sorry for anyone who loses money when undertaking flying training, but regrettably it is not a new situation and is not likely to change any time soon.

I started learning to fly back in the late '60s (£6 an hour!) and progressed through IMC rating, IR and CPL, so experienced many different flying schools of varied standards from those operating on a shoe string, to excellent standards and aircraft. The one thing that has been constant, however, is that not a single one of them is still around, such is the precarious nature of the flying training establishments.

I therefore always had a simple solution which was never to pay in advance for any training apart from some classroom studies and would advise anybody to do the same however high the inducement might be. There is however a solution if the CAA was minded to take action.

My business is travel agency, and in our industry any company offering a holiday with flights and hotels is required to be licensed by the CAA and provide a bond in order that they can give an ATOL (Air Travel Operator's License) certificate which guarantees the customers' money.

As the CAA also control the 'Approved Training Organisations', why not have a similar system for an ATO who asks for pre-payment for any flying? Theoretically a simple solution, although I think it is fair to say that the CAA is not known for its alacrity in new thoughts. As an alternative, ATOs could put the money into a trust account perhaps administered by AOPA.

The question really is: why should someone's holiday to the Med be protected and yet a person who perhaps is building a flying career has no protection whatsoever?

Martin Wellings
Eastbourne

PS: I live in Eastbourne, but why does *Pilot* not show at least correspondent's town? 'Sent by email' is as interesting as 'Sent by Royal Mail'. Admittedly if a

letter was received by carrier pigeon, that would be of interest!

The Assistant Editor replies

I agree, 'sent by email' is not very interesting, but we use it to indicate that the author's town was not given in the letter. By the way, we are yet to receive a letter by carrier pigeon, but given the CAA enthusiasm towards drones, I would not be surprised to receive one by that means soon!

DfT wants EC adoption

Dear Phil Wilson,

Thank you for your email on 16 April on Electronic Conspicuity (EC) devices for light aircraft.

EC plays a vital role, including to modernise the UK's airspace, mitigating the safe and efficient integration of airspace, and helping to mitigate Mid-Air Collisions (MAC). Most General Aviation (GA) pilots, including those who fly recreationally, are keen to adopt technology that reduces risk of MAC. Many GA aircraft already carry some form of EC technology, and all these technologies go some way to reduce MAC risk for airspace users.

In 2021, the DfT and the CAA, working with industry, established the Surveillance Standards Task Force to develop EC specifications, to deliver the Airspace Modernisation Strategy (AMS). You can read more about the Task Force here <https://www.caa.co.uk/news/joint-statement-from-cao-dft-on-the-development-of-a-national-standard-for-electronic-conspicuity/>.

The AMS, which was refreshed in January 2023, aims to 'integrate', rather than 'segregate' traffic. The aim is to promote voluntary, interoperable EC technologies to address the aim of integration rather than segregation. The alternative is to continue to segregate and exclude GA and other airspace users from specific airspace volumes. You can read the AMS here: <https://www.caa.co.uk/commercial-industry/airspace/airspace-modernisation/airspace-modernisation-strategy>.

We anticipate that the adoption of applicable EC technologies would reduce the operational burden for GA

through the integration of airspace volumes, allowing free routing. We are working with manufacturers when we are at the stage for products to be developed and consider costs.

In October 2020 the DfT made available funding to encourage the adoption of EC. The CAA is distributing these funds via a rebate scheme. The scheme will remain open to applications until 31 March 2024 (or until the funding is used). Those meeting the requirements can claim a 50% rebate of the purchase cost of an EC device to a maximum of £250.00 (including VAT), per applicant. More information can be found here: <https://www.caa.co.uk/General-aviation/Aircraft-ownership-and-maintenance/Electronic-Conspicuity-devices/>.

We hope that we have addressed your concerns. Please be assured that this work is being carried out with consultation from across the GA spectrum.

Aviation Directorate
Department for Transport

Addressed to our reader Phil Wilson in response to a letter he had sent to the DfT objecting to a proposal requiring GA aircraft to carry EC devices (see 'Airmail', June 2023 issue)

French airfield fees

As the summer months approach, many of us are excited to plan trips across the channel to France, with its abundance of smaller airfields owned by the local community or Chamber of Commerce. These airfields are known to be very accommodating to visiting pilots, often charging minimal landing fees or even accepting a donation. Even larger airfields visited by airlines such as Ryanair have relatively low fees for landing and parking. For example, Carcassonne in the South of France charges a reasonable €0.18/tonne/hour, with the first two hours free. In fact, it's more expensive to park a car there than an aircraft!

However, it's worth noting that a few aerodromes may discourage your visit due to their exorbitant parking fees, such as LFMZ (Lezignan Corbieres), which charges a staggering €2.00 per hour (i.e., €48 per day). Therefore, I

strongly urge all pilots to research and ascertain the expected fees for parking and landing before departing. You can find contact details via the iVAC app or SkyDemon airfield information/National AIP's function, which mostly will accept email queries in English, and simple sentences could be used with Google translate to convert to French. Bon Vol to all!

David Vale
by email

Pearls of engine wisdom

Having read the article about engines at Friedrichshafen ('AERO engines, cutting edge and historic', 'show report', *Pilot*, June) I couldn't stop myself from saying a few things relating to my long experience with old automotive engines.

The direct injection of the DB engine of the Messerschmitt 109 was followed by Mercedes-Benz using the system in the Gullwing 300SL car in 1955 (and previously to that by Gutbrod(!) in 1952). The injection pump of the 300SL was continued in the 'Pagoda' of which we happen to have an example. And the OHC (overhead camshaft) four-valve head was used

by Bentley from the early 1920s!

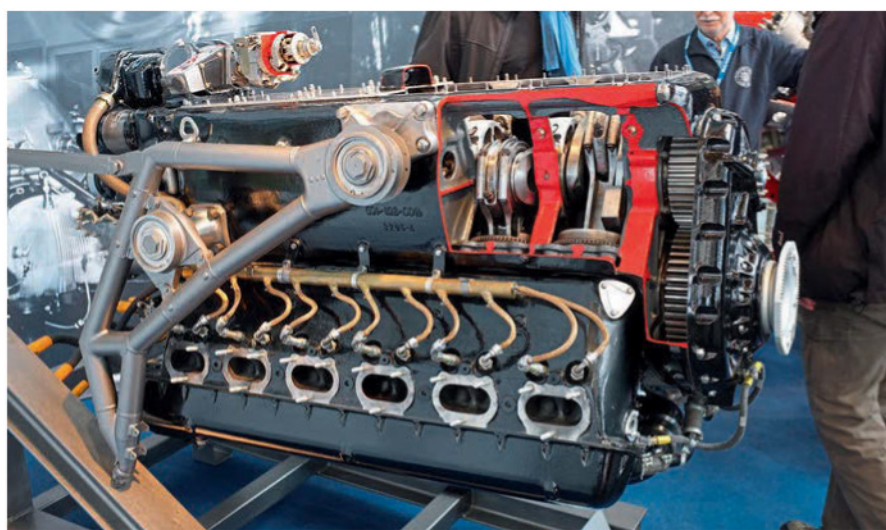
It's always a pleasure to read and enjoy *Pilot's* pearls of wisdom!

Manuel Queiroz

The Editor replies

For my sins, I am as passionate about racing and aero engines as I am about aeroplanes, and my bookcases sag under the weight of books on the subject. I would commend *The Secret Horsepower Race* by Calum E Douglas to any student of piston engine design – he expands on Manuel's point about aero engine design influencing

car engine design (and vice versa) in wonderful detail. The automotive world – F1 in particular – has come to owe an awful lot to aviation. Junkers aircraft were fitted with seatbelts and roll-over hoops in 1918 – such things only appeared in F1 in the early 1960s. The Le Mans winning Jaguar D Type used a monocoque body/tubular steel engine/front suspension mount that owed a lot to 1940s fighter design and the man who shaped its svelte, low-drag lines, Malcolm Sayer was a former Bristol Aircraft Company aerodynamicist. From disc brakes and forged alloy wheels to composite structures, the list goes on!

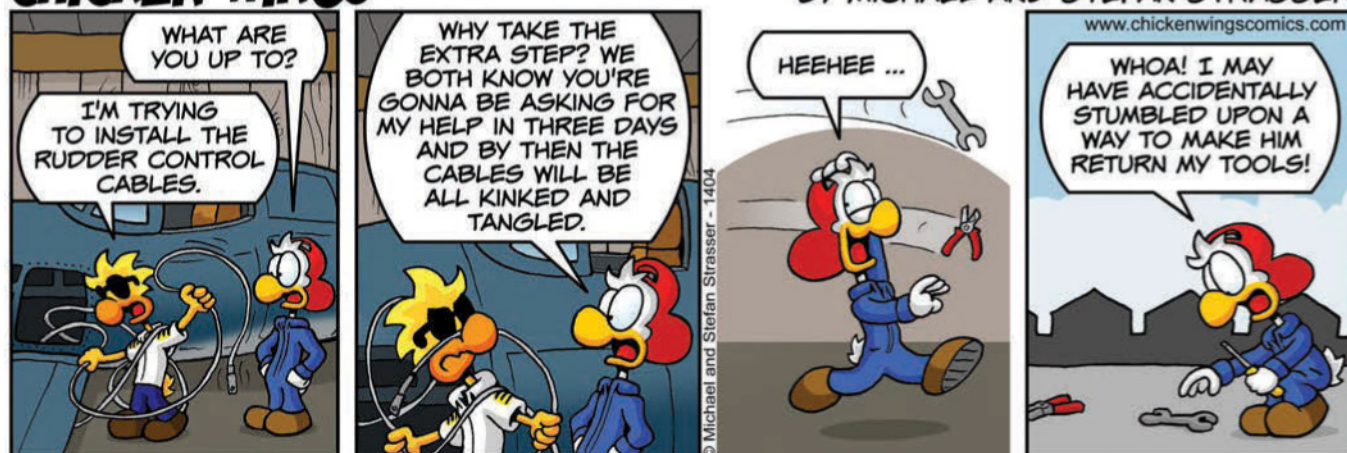


The DB601's direct fuel injection system - which used a modified diesel injection pump mounted between the cylinder banks - found its way into Mercedes-Benz sports cars, says Manuel Queiroz

YOUR THOUGHTS, COMMENTS AND NEWS

Write to: Philip.whiteman@kelsey.co.uk or Eugenio.facci@kelsey.co.uk, stating town. Alternatively, you can write to *Pilot* magazine, Kelsey Media, The Granary, Downs Court, Yalding Hill, Yalding, ME18 6AL, UK (please note that emails are preferred, as paper letters sent to our office may not be read promptly).

CHICKEN WINGS





Seduced by a Foxy Number

Can this highly-equipped aeroplane – it even has an autopilot, for goodness' sake – really be a microlight?

Words: Dave Unwin
Photos: Keith Wilson





Twenty years ago, I attended my first AERO at Friedrichshafen and it was a real eye-opener. Sadly, but unsurprisingly at that time, there was nothing there of any real note from Britain but the plethora of exciting and interesting airframes from all over Europe was amazing, particularly as many of them were described as ultralights – microlights, to us. Prior to this visit, like many others

I'd thought of microlights as being essentially a Rogallo-type hang glider fitted with a two-stroke lawnmower engine – but the machines exhibited at AERO demonstrably were nothing like that. Indeed, as soon as I started testing some of these advanced airframes, powered by various permutations of Rotax nine-series engines and fitted with the very latest in digital avionics, I couldn't help but be impressed. Surprisingly sophisticated, fast, frugal,



and comfortable, they mostly offered good handling and exemplary takeoff and landing performance. They seemed almost too good to be true – and they were. I soon realised that they all suffered from the same significant drawback: the useful load was not very useful. When marketed as microlights, they all had a MAUW (maximum all-up weight) of 450kg – although this could be increased to 472.5 if the machine was fitted with an airframe parachute recovery system. As most of these devices do not weigh anywhere near 22.5kg, many microlights were soon carrying them, but there was little gain in useful load, it generally being limited to less than 200kg even when one of the lighter recovery systems was fitted. With two well-rounded pilots of say 90kg plus enough fuel to meet Day VFR reserves of thirty minutes at cruise, you can soon see that even without any baggage there's very little left for fuel – maybe 15kg. And even with the commendably low fuel burn of a 912, that's just not very much.

The aircraft were right: it was the artificial weight limit that was wrong –

so the US FAA took the pragmatic approach of introducing a new class of aeroplane, the Light Sport Aircraft. The new class came with a licence to match and a maximum all up weight of 599kg (actually 1,320 lb) This completely revived the sport aviation sector in America – and after only twenty years or so Britain has finally followed suit.

AUSSIE APPELLATION

Waiting patiently out on Leicester airport's apron to play the starring role in *Pilot Magazine's* flight test of a 600kg microlight approved by the LAA (and the first one the Association itself has approved) is the A32 Vixxen.

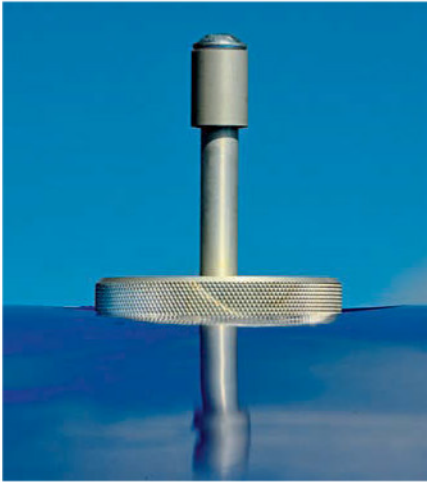
Designed by Yuriy Yakovlyev and built in Ukraine by Aeroprakt (literal translation – 'practical aero') of Kyiv, the Vixxen is an extremely sophisticated machine. (If you are wondering about its name, the two-X spelling was coined by the Australian distributor.)

Starting at the shapely shiny spinner, the propeller is a three-blade Airmaster fitted with a CSU (electric constant-speed unit) and driven by a fuel-injected 100hp

Rotax 912iS engine. I've flown literally dozens of different types powered by nine-series engines, and it's always interesting to see how individual designers have installed and cowed them. In this instance, the composite moulding splits horizontally, and is held in place by six Philips-head Dzus fasteners – a good arrangement as you need to remove the top half to check the oil and coolant. This section of the cowling has one large, and two small air scoops – the small ones feed cooling air to the rear cylinders, the large one is a ram-air intake for the induction system. At the front of the bottom cowl there's an oil cooler and coolant radiator, which features a ground adjustable shutter, along with an LED taxi light and a small adjustable intake that directs cooling air to the front cylinders. A notable advantage of the Rotax engine is that hot air for heating the cockpit is supplied from a heat exchanger plumbed into engine's cooling system, not from a muff around the exhaust. Consequently (and unlike air-cooled engines) there is no danger of CO poisoning.



It is only when you see the aircraft from just the right angle that you realise the wings are swept forward mildly, setting them back at the root and giving the pilot a better view



▲ *Rising above the low-pressure layer in flight, vents protrude from the beautifully-machined fuel filler caps. The tops of the tanks form part the wings' upper surface*



▲ *This level of engine access is essential if you are to check not just the oil and coolant levels, but for any leak in the cooling system*

The high-mounted constant chord wing is strut braced and carries two fuel tanks with a combined capacity of 90 litres, of which 88 are useable. The top skin of the tanks actually forms part of the upper surface of the wing and they can readily be removed for maintenance. Forward of the spar the wing is skinned in 2024T3 aluminium alloy sheet, while aft of the spar it uses aluminium skin on the top and Ceconite underneath. Full-span Ceconite-covered flaperons with three settings – 'up', 10° and 20° – complete the wing. There is a ground adjustable tab in the right one.

During the preflight briefing Ray had emphasised that the Vixxen has an impressively low stall speed, and looking at the large flaperons I could clearly see why. There's also a slot between the trailing edge of the wing and the leading edge of flaperon, and I wondered if this also allows the flaperons to function as a sort of Fowler flap when they are drooped. There are LED landing and position lights in both wingtips.

The fuselage is an all-metal monocoque structure skinned with the same gauge aluminium sheets as the wing. There's a small frangible panel just aft of the wings for the Magnum 601 S-LSA recovery system to fire through. Moving towards the tail there's an intriguing small scoop on the right side, and Ray explains that this is to aid airflow through the cockpit. Side strakes are faired into the large, constant chord all-flying tailplane, and the big fin

is an integral part of the fuselage and carries an equally large rudder. The latter doesn't have a ground adjustable trim tab as the engine is slightly offset to compensate for the propeller effect. Pitch trim is provided by a centrally-located anti-servo/trim tab. Cables are used for the elevator, rudder and trim

The paint finish is so lustrous that the Vixxen looks like it is completely metal skinned

tab, while the flaperons and steerable nosewheel are operated by pushrods. Just like the wing, the all-flying tailplane has aluminium skin forward of the spar, and Ceconite aft. As you will see in Keith Wilson's fine pictures, the paint finish is so lustrous the the Vixxen looks like it is completely metal skinned.



▲ *All-moving tailplane – stabilator to our American cousins – is balanced by a dual-purpose 'anti-servo'/trim tab. Fabric surfaces are so well finished, they look like metal skinning*

One thing I really didn't like was the location of the big pitot head. It's mounted on the port wing strut and is just asking to be walked into – the only way it could be any worse would be if it was on the passenger side, and I urged Ray to paint some red-and-white stripes on it. Apart from that, ingress to the cockpit is excellent – the sills are low, the large gull wing doors open through 90° and are supported by well-damped gas struts and the centre-stick also

helps. The seats are fitted with a good quality four-point harness and can be adjusted fore-and-aft, but you must remember to set them before you get in. The rudder pedals are fixed. Behind the seats is a huge baggage bay with a cubic capacity of 160 litres that can carry up to 30kg. Ray boasted that he'd even carried a gazebo. As the seats, fuel tanks and baggage bay are all closely concentrated around the C of G, balance issues are unlikely to be a problem.

Thus far, I'd seen nothing to contradict the microlight appellation adorning the fin, but as I began to take stock of the cockpit, controls, and instruments it soon became obvious that the term 'microlight' is – somewhat ironically, doing some pretty heavy lifting. This is a much better-appointed machine than many four- and even six-seaters that I have flown! Firstly, the cockpit is really spacious, and the sense of space is accentuated by the transparent door panels, large windscreen and rear windows. I commented to Ray



AEROPRAKT A-32 VIXXEN

Price as tested, £150,000.
In standard spec, inc Trig
transceiver and transponder,
£95,000

Dimensions

Length	6.27m
Height	2.22m
Wingspan	9.45m
Wing area	12.83sq m

Weights and loadings

Empty weight	349kg
Max AUW	600kg
Useful load	251kg
Power loading	8.05kg/kw (13.2 lb/hp)
Wing loading	46.76kg/sq m (9.65 lb/sq ft)
Fuel capacity	90 lit
Baggage capacity	30kg

Performance

Vne	130kt
Cruise	116kt
Stall	27kt
Climb rate	900fpm
Takeoff to 50ft	319m
Land over 50ft	404m

Engine & Propeller

Rotax 912iS air/liquid-cooled
flat-four, producing 100hp
(74.57kw) at 5,800rpm driving
an Airmaster three-blade
constant-speed/feathering
propeller

Manufacturer

Aeroprakt Ltd
Tel: +380 44496 7721
Email: air@prakt.kiev.ua
Web: www.aeroprakt.kiev.ua

UK AGENT

Dragon Aviation
Tel: 07974952118
Email:
dragon.aviation@hotmail.co.uk
Web: www.foxbataircraft.com



Redolent of old-fashioned designs but offering snappy operation, the highly-functional manual flap(eron) lever is set overhead, between the seats



The cabin is notably roomy, thanks in part to the bulged windows. Seat backs fold forward to access a baggage compartment big enough to hold a portable gazebo



If it all goes completely to pants, you have the option of discharging the Magnum 601 S-LSA recovery system fitted in the baggage compartment



that our shoulders weren't touching, and he pointed out that as the door panels are bulged outwards the A-32's cockpit is wider than a Cessna 172's.

By now, you'll be starting to appreciate that the Vixxen does have several interesting features, such as the Y-shaped centre-stick. This clever design is an elegant and lightweight way of providing a stick for both pilot and passenger, although a pair of more conventional yokes is an option. There are plunger-type throttles either side of panel. Up in the roof is the flaperon lever, while the two fuel valves are mounted above and behind the pilot's heads (one on each side). Important controls like that should really be in front of you, easy to both see and reach, and at the very least there should be a single fuel shut-off. Furthermore, as there is no header tank and the injected



engine's fuel pumps have return lines, you can't just leave both valves open if the tanks are more than half full. Both fuel pumps are high capacity, only a small proportion of the flow is actually injected and a considerable quantity returned to the tank(s). Consequently, it is possible for one tank to become over-full in flight and start venting fuel.

The panel features a large, centrally mounted Dynon MFD (multi-function display) plus standby analogue ASI (airspeed indicator) and altimeter. The other avionics are a Dynon autopilot, audio panel and transceiver, with an iPad running the near ubiquitous SkyDemon GPS navigation app. A small sub-panel extends down from the base of the instrument panel and carries dual fuel gauges, a row of toggle switches for the electrical services and a separate row of guarded ones for A and B engine

'Lanes' and the two fuel pumps, a fuse box and a big green starter button. (Like most piston aero engines, the duplicated ignition system of the Rotax iS engine is controlled by independent switches. However, these do considerably more than simply grounding a magneto. In fact, they actuate two independent electronic modules, for reasons best known to Rotax called Lanes A (primary system) and B (backup), within the ECU (engine control unit). The ECU is a very sophisticated computer that regulates the dual electronic ignition and electronic fuel injection, as well as constantly monitoring every aspect of the engine's operation – oil pressure and temperature, coolant, cylinder head and exhaust gas temperatures, rpm and manifold pressure etc. Just about every conceivable parameter is monitored and controlled by the ECU.)

▲ General handling is 'agreeably agile with a respectable roll rate and good control authority around all three axes', reports Dave

I liked the way a light next to the relevant fuel gauge flashes when the level in that tank is getting low, but didn't like the Dynon 'speed tape' displaying mph while the analogue ASI was in knots. Of course, the Dynon can easily be reconfigured, even in flight, but Ray explained that he prefers mph as the unit gives up at 30kt, but will read down to 30mph!

Beneath the Dynon is the hugely capable digital autopilot with an audio panel to its right and the controls for the electric constant-speed propeller directly underneath. Extending aft between the seats is a centre console containing levers for the parking brake and pitch





▲ Large Dynon multi-function display dominates the Vixxen's relatively small panel, with stand-by analogue instruments to the left, iPad mounted on the right and dual throttles sticking out the bottom corners. Blue rotary switch controls propeller speed & feathering

trim, and further back a T-handle for the airframe recovery system's rocket. The knobs of the co-located parking brake and trim levers are both black (the trim really should be green) but the fact that I'm reduced to nit-picking the correct colour-coding should tell you this is generally a very thoughtfully designed cockpit. A feature I really liked was that simplest but most useful of things, a large oddments tray placed on either side, just behind the instrument panel.

The engine start was simple and straightforward, as you'd imagine of a modern motor fitted with electronic fuel

injection and ignition. Set the switches, press the button and it starts, just like a car. The iS engine also greatly reduces pilot workload in flight, as there's no mixture to adjust or carb heat to apply.

It's only a very brief taxi from the apron to Leicester's Runway 10, so although I don't get that much of a chance to evaluate the ground handling characteristics, the combination of a tricycle undercarriage, precise nosewheel steering, powerful hydraulic disc brakes and a fine field of view make everything very straightforward.

With Ray and me plus about half-fuel

we're around 60kg below the 600kg limit while an ambient temperature of +15C gives a density altitude of around 500ft. The surface wind is 'straight down the slot' at 10kt, the acceleration is excellent and I doubt we even use ten per cent of R10's 935m. Climbing out at 65kt and just under 900fpm sets us at a fairly steep angle, so I lower the nose, click the prop from 'Takeoff' to 'Climb' and then 'Cruise', and set off after the 172 cameraship.

With the nose lowered my initial impression is that the field of view really is very good. The steeply raked windscreen and bulged Perspex doors



▲ The weird and (flight-tester Dave assures us) rather wonderful Y-stick, which offers dual pitch/roll controls for the price of one. Tall 'blades' at the front operate the brakes



▲ Hmm – we thought hard-to-reach fuel valves located behind the crew went out with some of the more dubious aircraft designs of WWII



▲ Set low out of one's line of sight, similarly coloured and shaped levers operate the parking brake (a simple valve in the hydraulic circuit) and elevator trim



▲ Also set low down, between the seats, the operating handle for the Magnum 601 S-LSA recovery system, which must be armed for flight

really do give the cockpit a very airy feel. In fact, the clear doors might almost make it feel a little *too* exposed for some passengers, and it might be an idea to paint a horizontal black line at around waist level to stress that there is a solid barrier between them and the drop.

As Keith's window opens I set the prop back to 'climb' (to give both better acceleration and more drag) slide into formation and suddenly realise how 'normal' the Y-stick feels. I haven't flown an aircraft with one for ten years and they really do have a lot to commend their installation in this class of aircraft.

The air-to-air don't take long. Ex-RAF pilot Sam is flying a beautifully smooth lead, the air is calm and the Vixxen offers

(for a high-wing aircraft) a fine field of view. Furthermore, the controls are crisp and the engine powerful and responsive. Keith 'kisses us off' and I break down and away from the cameraship and begin an examination of the general handling, which is agreeably agile with a respectable roll rate and good control authority around all three axes.

Breakout forces are pleasantly low and control harmony ideal as the flaperons are just a little lighter than the elevator. Slow flight is very straightforward and

very benign. I honestly don't know how low the minimum speed was with the flaperons lowered to 20° (the Dynon's speed tape had simply given up) but it's somewhere south of 30mph. There is no artificial stall warning device and as the stall is approached the buffet is quite subtle, but the steep angle is hard to ignore. Even rather brutal full power departure stalls generate no unpleasant surprises.

Moving on to the stick-free test checks confirms the Vixxen is essentially a very



stable machine, being strongly positive longitudinally and neutral laterally. The directional stability is slightly soft, almost certainly because the extreme sideslip angles I introduce as part of this check end up with the steerable nosewheel holding on the rudder when I release the pedals, due to its large spat inducing over-balance.

By now I'd realised that I'd hardly touched the trimmer the whole flight. Intriguingly, whether flaperons up or down, or engine power at full or idle, the Vixxen always seemed to be in trim. Very interesting! Consequently, having trimmed for a specific speed and power setting, the amount of stick force needed to accelerate or decelerate is very low. (Generally not an ideal handling characteristic – Ed.)

Assessing the cruise performance revealed that at 4,000ft and 4,800rpm (engine, not geared propeller speed) the TAS (true airspeed) was just over 100kt, with the Rotax burning about 14 lph and the electric prop in the 'Cruise' pre-set. A more relaxed setting of 4,200rpm still gave a TAS of just under 90kt, while the fuel flow dropped to a frankly frugal 10 lph. With full tanks, this makes the still-air range over 750nm, with at least thirty minutes reserve. That would be a much longer flight than my personal tank is good for, but if you were minded to plan such a trip, the digital autopilot would definitely come in handy! This is an extremely impressive and very capable device, that honestly

would not look out of place in a small turboprop, let alone a microlight. As it captured and held headings and altitudes with digital precision, I could only shake my head in astonishment and ruminate on how the hardy airmen (and women) of yore, who wobbled around British skies in Thrusters, Shadows and similar contrivances, would never believe this machine was also registered as a microlight.

All that was required now was to try a few circuits, so we headed back towards Leicester with 5,200rpm and a TAS of 120kt while still burning less than 18 lph. They say that familiarity breeds contempt but in aviation I think it's more

A very impressive machine... handling is good, performance superb

like complacency than contempt, and I was already feeling so familiar with the Vixxen that I made a silly mistake that I should've caught – and there were clues! Firstly, I was surprised how flat the glide was, even with the flaperons down and the power at idle. In fact, I had to introduce quite a steep sideslip on final. The landing was acceptable, albeit slightly long as the aircraft floated – and when I retracted the flaperons and then added power for the 'go' part of the touch 'n' go it didn't go quite as vigorously as I'd expected.

The penny finally dropped – I'd not reset the prop from 'Cruise' to 'Takeoff'! In many aircraft this could have been more than embarrassing, but the Vixxen has such a surplus of performance it was

a complete non-event (except for my own embarrassment!) For the next circuit I upped my game and got the aircraft correctly configured, finding the flaperons efficient and the extra drag from the finer-pitched prop noticeable. I flew the approach at fifty knots, although with a bit more time on type I think that another five could be safely shaved off, particularly in light winds. On final it was increasingly apparent that the Van's RV-4 that had just landed wasn't going anywhere (it transpired it had burst a tyre) but as it was off to one side and past the intersection I elected to land – and had to add power to make the turnoff. I doubt the ground roll was much more than 100m.

In conclusion, the first LAA-approved 600kg microlight is a very impressive machine. The handling is good and the performance superb. It can carry a decent payload a fair distance at a reasonable speed and with frugal fuel flow. It is almost impossible to snag – and when I said to Ray that the autopilot disconnect button should really be on the stick top and not the panel, he pointed out that it actually didn't need to be there, as the Vixxen doesn't have electric trim (and consequently can't 'run away').

Practical, tractable, comfortable, and economical to operate, probably the only downside to the test aircraft is its price: an eye-watering £150,000. However, I should point out that it is a demonstrator and was filled to the gunwales with every conceivable option – even the lush paint job probably cost around ten grand!



This is how to land a tricycle-undercarriage aeroplane properly, people – with tail practically scraping the deck, the wing will be at the stall and there'll be no floating or wheelbarrowing!



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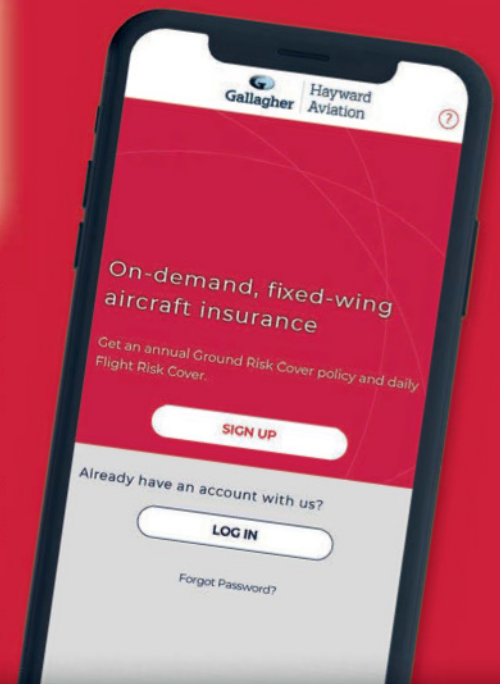
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PUSH TO TALK

The D Day legacy

As we climb away from Saltby's time-worn tarmac I glance across at Sue Talley and can see she's profoundly moved by the moment. "Well Sue – you did it. You've just taken off from the very same runway your dad took off from almost 79 years ago, on 6 June, 1944!"

"This is incredible, amazing, awesome. Thank you so much, this really means a lot, I don't know what to say." "You don't have to say anything," I reply, "it's my pleasure. I'm so chuffed you managed to see Saltby from the sky, just as your dad would've done." Sue gazes down at the classic 'patchwork quilt' of the English countryside. "It's just so pretty – do you think it has changed much?" "No," I reply, "in fact, you can still see where the third runway was, even though it's gone back to agriculture. Most of the land around the airfield has always been farmed, and these villages are very old. Isaac Newton grew up in that one just under the right wing. It hasn't changed much." Sue is silent again, and I know she's thinking about her dad, and how he must've been feeling on the evening of 5 June, 1944.

One of the neat things about flying from a historic airfield is the people that you meet. When local historian Darren Bond contacted the Buckminster Gliding Club to explain that an American couple who were touring the UK wanted to visit Saltby as they had a family connection, the club was eager to facilitate their visit and I offered to surprise them with a flight in the Scheibe SF-25 motorglider. Sue and her husband Jack thought that they were just going to be driven around the airfield and along the runway by local resident Ray Bennett, who was a child in 1944 and remembers the American servicemen and the 314th Troop Carrier Group well, so when we sprung the flight on the couple, they couldn't quite believe it.

After I'd taken them both up, they

showed me a 'V-Mail' letter that Sue's dad, Lieutenant George Gurwell, had written home from Saltby, dated 5 June 1944. George was an officer with the 508th Parachute Infantry Regiment, which was part of the 82nd Airborne Division, and on the morning of 6 June, he and his men had taken off from Saltby (USAAF Station 538 as it was then) and parachuted into Normandy at around 0200 as part of Operation Overlord.

Like many of the paratrooper units involved in Overlord, men of the 508th were dropped in the wrong locations and had extraordinary difficulty linking up with each other. Eventually the 508th partly regrouped and remained in contact with German forces until relieved on 7 July when it became the divisional reserve force. By the time the men were transported back to England in two LST landing craft and returned to their station at Wollaton Park in Nottinghamshire, their numbers were sorely depleted, for of the 2,056 paratroopers from

One of the neat things about flying from a historic airfield is the people that you meet

the 508th who had participated in the D-Day landings, only 995 returned.

George was not amongst them, having been wounded during a famous battle in US Airborne forces history, the 82nd's stand at LaFiere Bridge. After recovering at a hospital in England, George went on to take part in all the major European campaigns of the 82nd Airborne after D-Day, including the ill-fated Arnhem landings.

After George's death in 2004, Sue and Jack discovered a veritable treasure trove of WWII memorabilia in his house, including over a thousand letters between him and his wife, and even a programme from a Regimental boxing match dated 11 January, 1943, which had the original version of the song 'Johnny Paratrooper' (AKA, 'Blood on the Risers') typed on the back. The 82nd

Airborne still sings a version of this song. The huge amount of material also included a Round Robin letter, to which 48 of the 508th's officer's wives had contributed by the time it made it back to Jeane Gurwell, after VE Day. Historians have called this Round Robin letter unique, prompting Sue and Jack to write a book called *Never Give Up the Jump*.

It was a huge privilege for me to take Sue flying the day after America celebrated Memorial Day, from the very runway from which her father had embarked on 'The Great Crusade' – a phrase Eisenhower used in his 6 June Order of the Day, which was broadcast over American and British force's radio – and also to fly Jack, whose father had been a flight engineer on Douglas C-54 Skymasters during the Berlin Airlift. It was also memorable to stand on the same taxiway that George's C-47 Skytrain had been parked on that evening 79 years ago and read the original, beautifully written V-Mail letter that he sent

home on 5 June. And before anyone writes in to point out the irony of taking the

Talleys flying in a German-made motor glider, I know... In fact, I thought it was rather apposite. Having been made in Germany, and then based in America, our SF-25 now flies from an airfield that played its part in crushing Nazi tyranny and welcomes people and aircraft who simply want to fly in the spirit of peaceful participation. After all, 'war is mankind's most tragic and stupid folly: to seek or advise its deliberate provocation is a black crime against all men.' Something that the man who wrote those words, General Dwight D. Eisenhower, knew all too well.



DAVE UNWIN

Pilot's Flight Test Editor operates a Jodel D.9 from a farm strip and has logged stick-time on everything from ultralights to fast jets

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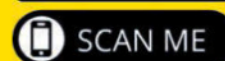


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Old Timers

A round-up of historic aircraft display and restoration news
compiled by Peter R March and Paul Fiddian



Showtime!

After weeks of drab, damp Spring weather, the conditions dramatically improved from the second week of May, just in time for the start of the UK's 2023 air display season with Shuttleworth's Season Premiere Air Show

After widespread heavy rain on Coronation Day, Sunday 7 May dawned dry with the prospect of a sunny afternoon. This revitalised the preparations at a rather soggy Old Warden for Shuttleworth's Season Premiere Air Show. Through the morning, the scheduled participating aircraft were brought out onto the flight line, with the exception of the Spitfire and Hurricane that remained on the hardstanding. The flying display opened promptly at 2pm with former Kings Cup Air Race participants Comet G-ACSS, Hawk Speed 6 G-ADGP and Mew Gull G-AEXF. Continuing

the 'royal' theme, Bob Brinkley neatly displayed the 'Royal' Chipmunk WP903 in its overall dayglo red paint scheme from 1968-69, when it was flown by then Cambridge University student HRH Prince Charles to gain his RAF Preliminary Flying Badge.

The year's first UK appearance by the BBMF Lancaster was one of the afternoon's highlights. Flt Lt Tim Dunlop showed how to get the spectators' cameras clicking with three stunning, curved, topside passes. This was followed by the display debut of Graham Hinkley's ex-AAC Lynx AH7 XZ179, flown by Clive Clark.

The much-anticipated return of Navy Wings' Swordfish W5856 in the hands of Glenn Allison was welcomed, not least by sprightly 99-year-young WWII 'Stringbag' telegraphist air gunner (TAG) Petty Officer David Berry. He met the team from RNAS Yeovilton and recounted his stories of operations from merchant ships and escort carriers in the Atlantic and North Sea.

There were further salutes to King Charles III's coronation with a formation of flag-flying Shuttleworth DH60X Hermes Moth, Southern Martlet and David Cyster in his 'solo to Australia' Tiger Moth G-ANRF and



The 'Royal Chipmunk' WP903 displaying at Shuttleworth's Season Premiere Air Show

a colourful drop by the Red Devils parachute team. A good selection of Shuttleworth aircraft, including the DH51 and Tutor; Lysander and Gladiator; Sopwith Triplane and Bristol Fighter; RAF SE5a and Sopwith Pup and the Avro Triplane and Bristol Boxkite were ably displayed. Hats off to Graham Saw, who flew the minimal, very basic Eon Primary glider and Richard Crockett who coaxed the EE Wren into the air at the third



To show its topside, BBMF Lancaster PA474 banks for its second pass along the Old Warden display line

attempt downhill on Runway 03 and completed a 180 degree turn at about 20ft to land in the opposite direction

on Runway 21. This was real 'seat of the pants' flying at its most exciting.

Report & photos: Peter R March



▲ EE Wren just airborne from Runway 03 making a spectacular 180 deg low-level turn to land in the opposite direction

▲ Navy Wings' Swordfish W5856 back in action after a long absence

Shuttleworth's Special Operations Evening Air Show



On Saturday evening 20 May, with breezy but otherwise excellent conditions, the flying started just like the Season Premiere, with the Collection's racing trio. The first of the themed items followed, with a visiting Auster duo of Kevin Hales' AOP6 TW536 and Simon Tilling's Mk I LB375, and later a pair of Piper Cubs and spritely solo Bird Dog. »

▲ Neat air observation pair of Austers TW536 and LB375 at Shuttleworth's first Evening Air Show of 2023



- ▲ Shuttleworth's Lysander III V9367 lifts off for the show's set-piece finale as the sun sets
- ▶ Duxford's Blenheim perfectly flown by John Romain in the glorious evening conditions



The concluding 'Special Ops' item was Shuttleworth's Lysander that re-enacted a clandestine landing and secret document exchange as twilight approached.

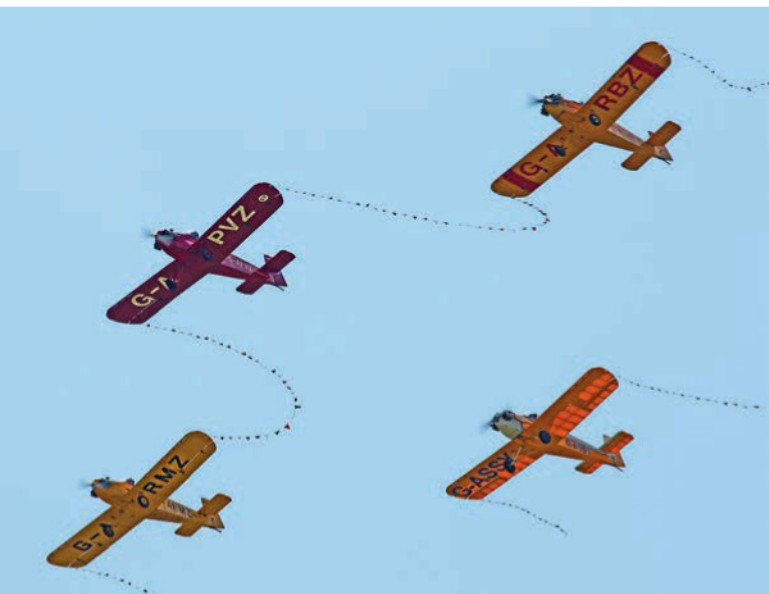
Among the other highlights were John Romain's customarily superb

showing of ARCo's Blenheim 1F L6739; the smooth purr of the Roll-Royce Spitfire PR XIX PS853 and some really spirited displays from the 'home team', not least the Barnstorming Tiger Moth, DH60X, Parnall Elf, Magister and

Chipmunk which had tough conditions for their limbo flying. A very successful opening month to the Collection's flying season – and there's much more to come like this until October.

Report & photos: Paul Fiddian

VE Flying Day at Duxford



Tiger Club Turbulent Team opening its well-honed barnstorming routine in tied-together formation

IWM Duxford's fiftieth anniversary air display season began over the Coronation weekend with the VE Flying Day on 7 May. Although the day started as Duxford shows often tend to do, with low cloud and poor visibility, the weather soon improved

for the crowd to enjoy an eclectic mix of aircraft displays, from the powerful pairing of Hawker Fury 'SR661'/G-CBEL and FG-1D Corsair 'KD345'/G-FGID to the fun Tiger Club Turbulent Team with its tied-together formations and limbo flying.



Spitfire Vs EP120 and EE602 that tangled with Buchón 'Yellow 10' in the closing 'dogfight' at the VE Flying Day

Other highlights included Hawker Nimrod I S1581/G-BWWK and Mark Miller's DH Rapide G-AGJG. The display finished with a duel between a pair of Spitfire Vs and Buchón 'Yellow 10'/G-AWHK.

The relaxed pace of the event allowed plenty of time for visitors to catch up on changes within the hangars. The engineers were busy

on B-17G Sally B, fitting a newly overhauled Hamilton Standard propeller to the No 4 engine. In Hangar 5, 'Conservation in Action', work to strip the paint from largely dismantled Shackleton MR3 XF708 was readily apparent. See iwm.org.uk/airshows for details of future Flying Days and Air Shows. **Report & photos: Andrew March**

Abingdon pulls in the crowds

The Air & Country Show at Abingdon Airfield (Dalton Barracks) on a sunny 20 May attracted a record crowd, an impressive number of stalls and ground attractions and sixty-six aircraft for the flying and static displays. Helicopters have always been numerous at the show and 2023 was no exception, with a dozen attending. The Gazelle Squadron Display Team with its four ex-military helicopters, Richard Misselbrook flying the newly restored Lynx AH7 XZ179, a Wasp HAS1 and a Scout AH1 all performed.

Amongst the WWII fighters, James Brown gave a graceful display in his Hurricane I R4118 while Nick Smith thundered through his routine in Fighter Aviation Engineering's P-47D *Nellie* and regular *Pilot* contributor Bob Davy was fast and furious in his Yak-3. Tony de Bruyn showed what the Vietnam War OV-10 Bronco (Belgium-based G-ONAA) is capable of, keeping well inside the airfield boundary through his routine.

The aerobatic highlight was the Titans display team with its unusual pairing of dissimilar aircraft – high-wing aerobatic Super Decathlon and high-performance XtremeAir Sbach XA-42, flown by Patrick Willson and Phil Ansell respectively. The flying display ended with a dynamic new Mustang duo – Mark Levy in TF-51D *Contrary Mary* and John

Dodd in P-51D *Miss Helen*.

The RAF received public acclaim for putting three locally-based aircraft into the static display and opening them up to the public. Oxford UAS Tutor T1 G-CGKS flew in from RAF Benson and was parked alongside No 47 Squadron Hercules C5 ZH889 from RAF Brize Norton. After circling the airfield shortly before the flying display commenced, C-17A Globemaster III ZZ176 made an impressive arrival and taxied into the static park.

A long queue of visitors eager to see inside the strategic transport's cabin quickly formed. The Hercules' departure was rather poignant, as it marked the end of one of this workhorse's last airshow appearances in RAF service.

Interesting visiting aircraft included Fokker S.11 G-BEPV; Soko Kraguj G-BRXK; Dornier 28 N123CA; Hornet Moth G-ADNE, Hawk Tr N3788/G-AKPF; Isaacs Fury K2065/G-AYJY; Navy Wing's Stinson Reliant and Pitts S-2A G-BADZ. The latter retains its famous Rothmans Aerobatic Team paint scheme and is operated for aerobatic training by Pilot Flight Training at Oxford.

The last of six Gazelles to arrive was a colourful former French Army SA-342M with the Hungarian registration HA-HSG that flew in from Brighton.

After cancellation last



The Gazelle Squadron Display Team's four helicopters gave a lively performance at Abingdon's 21st Air & Country Show



Section of Abingdon's flying/static line showing Bronco 99+18, Auster TW536, Yak-3 and -52, and Mustang pair



RAF participation included an Oxford UAS Tutor T1 and 47 Sqn Hercules C5 ZH889, making its final public Abingdon appearance

year following the passing of HM Queen Elizabeth II, the volunteer team led by Neil Porter was determined

to produce a bigger and better charity event in its twenty-first year. This, it most certainly did.

Report & photos: Peter R March



Former Rothmans Aerobatic Team Pitts S-2A G-BADZ now operated by Pilot Flight Training at Oxford

RAF C-17A Globemaster III ZZ176 made an impressive short-field take off on its return flight to Brize Norton

Focus on Bomber Command

PHOTO: RAF MUSEUM



Lancaster 'S-for-Sugar' with new displays installed for the Bomber Command Exhibition at Hendon

A new RAF Bomber Command exhibition was unveiled at the two Royal Air Force Museum sites, London (Hendon) and Midlands (Cosford), in mid-May 2023 to coincide with the eightieth anniversary of the Dambusters raid. With a personal angle on WWII's 125,000 Bomber Command aircrew, 'Strike Hard, Strike Sure: Bomber Command 1939-1945' depicts events 'through the lenses of those who served'.

Besides highlighting the bombers flown and the ordnance dropped, the exhibitions in Hendon's Hangar 5 and Cosford's Hangar 3 also feature personal items, interactive displays and full-sized silhouettes. Those at Hendon include key Bomber Command figures such as Wellington and 'bouncing bomb' designer Barnes Wallis and WC Raymond Hilton, who captained the first of famous Lancaster I R5868

S-for-Sugar's 137 operational missions. A significant new Hendon exhibit is the tail section of Short Stirling III LK488 that, with the Lancaster and Halifax II W1048, makes up the triumvirate of RAF heavy bombers. Cosford's exhibition also includes a section of LK488, plus two 'new' aircraft: Bristol Bolingbroke IVT 'L8756' and Vickers Wellington X MF628.

The Wellington was moved in from the adjacent Michael Beetham Conservation Centre, where it had undergone ten years' conservation work. Built by Vickers-Armstrong at Blackpool/Squires Gate, it was rolled out and first flown as a Mk X on 9 May 1944. In March 1948, it was converted by Boulton Paul into a T10 navigation trainer and served with No 1

Air Navigation School at Hullavington. MF628 was involved in the filming of *The Dam Busters* movie at RAF Hemswell in summer 1954, before making its last flight on 24 January 1955. Displayed at RAFM Hendon from 1972, the Wellington was moved to Cosford in July 2010. It was found to be heavily corroded, prompting a full restoration and return to its original bomber configuration. It is displayed with its rear turret removed to show its interior, a panel highlighting its geodetic structure and overlaid linen covering and the silhouettes of its five crew members.

Other aircraft exhibited as part of the Bomber Command exhibition include a Luftwaffe quartet of Fw 190A8, Ju 88R1, Me 262A-2A and Me 410A-1/U2, along



PHOTO: PAUL FIDDIAN



Parts of Stirling III LK488, recovered from its crash site on Mickie Fell, now on public display at Cosford (here) and Hendon



After major restoration work and back as a 'bomber' again, Vickers Wellington X MF628 is now displayed at Cosford

PHOTO: PAUL FIDDIAN

with a V-1 flying bomb and V-2 rocket. Tiger Moth T6296, brought across from Hangar 1, represents the elementary flying training that every Bomber Command pilot received.

The BBMF is also commemorating the eightieth anniversary of the Dambusters Raid this year. On the evening of 16 May, Lancaster PA474 flew over all of the former Lincolnshire bomber bases in memory of Operation Chastise. Two days later, it joined up with this year's display pilot, Flt Lt Matt Brighty in a No 29 Squadron Typhoon FGR4 at RAF Coningsby to gain approval for a special display dedicated to the crews of 617 Squadron. They made their public debut at the Midlands Air Festival on 2 June.



BBMF Lancaster and 29 Sqn Typhoon FGR4 duo photographed at Coningsby on 18 May

PHOTO: ANDREW MARCH

Around the fly-ins

The first of several events this year at New Farm, Piddington, was the Spring Fly-in on 13-14 May. It was the first appearance since 2020 of Nigel Hitchman's 1940 Cub G-BVAF, following a ground-up restoration.

Among the other visitors were Nigel Huxtable's rarely-seen 1946 Auster J/4 G-AIJM *Priscilla* that flew again last year after a 27-year restoration.

Oaksey Park hosted a 'party' for the seventieth anniversary of the resident Tri Pacer G-BUVA, which appeared with special birthday markings added to its white and blue scheme. It was joined by a number of other Pipers including Colts G-ARKM and G-ARNJ and several Cubs.

Sunny weather attracted a good selection of visitors to friendly North Coates for

the Spring Flying Meeting on 20-21 May. A highlight was the now elusive Miles Messenger III G-AIEK 'RG333', owned by Mark Hales and kept at a strip nearby.

Austers included rarely seen J-5L G-AMVD, flown in from Wickenby by owner Derek Houghton. It retains the same basic colour scheme worn when with the Cranfield Institute of Technology in the 1970s. The Huxtable family

attended in strength, with Nigel and daughter Sarah Jane bringing in Auster 5 G-APBW to meet up with son Mark in his Midget Mustang G-IHX, flown from Shipdham. Colourful Bucker Jungmanns, Mark Turner's G-RETA from Rectory Farm near Newark and the G-BJAL Group's example from Brighton, were among the other visitors. **Report & photos: Nigel Hitchman**



▲ Nigel Huxtable's Auster Archer G-AIJM, flying again after a twenty-seven year restoration, at New Farm

▼ Nigel Hitchman's freshly-restored Cub and other G-BUVA 'birthday' attendees at Oaksey Park



Tri-Pacer G-BUVA looking smart in its seventieth anniversary markings at Oaksey Park on 18 May



Once widely-seen UK airshow participant 'Monty's Messenger' ('RG333'/G-AIEK) made a rare appearance at North Coates



Flying Legends returns

PHOTO: NIGEL HITCHMAN



Seen at Duxford on 1 June, Comanche Fighters' P-51B 'Berlin Express' and P-51D 'Hun Hunter/Texas' which will be displayed in The Horsemen's Mustang trio at Leeds East Flying Legends on 15-16 July

The Fighter Collection has confirmed that its popular Flying Legends warbird airshow will take place at Leeds East (the former RAF

Church Fenton) on 15-16 July. With 'more aircraft to follow', the participation list at flyinglegends.com in early June already featured

thirteen Spitfires, including the debut at Legends of FR XVI RM927/G-SXIV; three Hurricanes; three Corsairs (TFC, Les Casques de

Cuir and the Flying Bulls, the latter also providing its B-25J Mitchell and P-38 Lightning) and a Mustang trio of P-51B *Berlin Express*, P-51D *The Hun Hunter/Texas* and TF-51D *Contrary Mary*. A welcome return will be made by the excellent Swiss Classic Formation of DC-3 and three Beech 18s.

Will there be a special or 'surprise' item, for which Flying Legends has become renowned? What is certain is the return of another Legends tradition: the show-closing Balbo.

Leeds East will not be able to accept visiting aircraft but has arranged with nearby Sherburn-in-Elmet that GA pilots can land, camp and eat/drink there over that weekend: see sherburnaeroclub.com for further information.

Spitfire down

Spitfire FR XVIII SM845/G-BUOS was once again badly damaged on 26 May 2023 while landing at Hildesheim, Germany. Registered to Fliegerhorst GmbH & Co KG, the Griffon-engined Spitfire was pictured having veered off the runway, slumped to one side with its port wing severed and several propeller blades sheared off. The pilot is reported to have received only minor injuries.

Recovered from open storage at Kalaikunda in West Bengal by Ormond and Wensley Haydon-Baillie in 1977, SM845 was part-restored at Chino, CA before being shipped to the UK in 1988. Registered G-BUOS, it was returned to airworthiness by Historic Flying at Audley End where it was flown on 7



PHOTO: HILDESHEIM POLICE

Badly-damaged Spitfire XVIII SM845 at Hildesheim: this warbird's second crash in recent years

July 2000. After being sold to Sweden and registered there as SE-BIN, it crashed at Tynset, Norway, on 21 August 2010, sadly killing the pilot.

The wreck was purchased by Richard Lake in 2012 and its fuselage was rebuilt by Airframe Assemblies at Sandown, IOW. Completed

at Duxford by Historic Flying, it was re-flown on 17 December 2013, again registered G-BUOS with the serial SM845.

Bon anniversaire, la Patrouille!



Alpha Jets of the Patrouille de France, with new tail art applied for its seventieth anniversary season

A special airshow marking the seventieth anniversary of the Patrouille de France, the French Air Force's aerobatic team, was held at its home base Salon de Provence on 20-21 May. Uncharacteristically for the south of France, the weather was rather grey and drizzly. A number of aerobatic teams took part, namely the Saudi Hawks; Patrouille Suisse; Croatian Air Force Wings of Storm and the two Spanish Air Force teams: Patrulla Aguila and Patrulla Aspa, with its five EC-120 Colibri helicopters. Further



Unique Team Leaders formation flown at Salon de Provence on 21 May

French Air Force participants included the excellent A400M Tactical Demo that led the Patrouille de France and the Rafale in a formation flypast as, in the background, two Extra EA330s from Equipe De Voltige wrote a giant number '70'.

After Sunday's flying display, the lead aircraft from the jet teams along with the Belgian and Hellenic Air Force's solo display F-16s, the Swiss Air Force Hornet and the Rafale joined together for a series of impressive flypasts over the base. **Report & photos: Steve Coe**

The Italian connection



PHOTO: PETER R. MARCH

Previous RIAT participant P166C I-FENI is returning to Fairford this year with around three-dozen other Italian aircraft marking the ITAF's centenary

The Italian Air Force's centenary will be marked in a big way at RIAT 2023 on 14-16 July with some thirty-five civilian-owned and military aircraft flying in to RAF Fairford to take part in the flying and ground displays. In a dedicated part of the static area, there will be a special gathering of historic types including a pair of Aermacchi MB326 jet trainers, and the star item: the world's only airworthy Fiat G.91. Also due to attend are I Fenicotteri's Piaggio P166C I-FENI, making its first RIAT appearance since being re-painted in military markings; a SIAI Marchetti SF260AM and U-208A; Beech G18S; Cessna LC-126A (C195); a pair of T-6D Texans and trios of Piaggio P-149Ds and Fiat G.46 piston-engined trainers. The Norwegian AF Historical Squadron's Vampire FB52 has been specially repainted in Italian AF markings to join the static display. See airtattoo.com for more information on RIAT 2023.



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Betting the house

Imagine this. Your daughter is at university studying history of art, she funds her course with a student loan and works part-time in a coffee shop to pay up her living costs, and you, an indulgent parent, slip her the odd hundred pounds for the city breaks to which all students are entitled these days. Neither you nor she are on the line for any other costs. Your boy, Harry, aeroplane-mad since a toddler, decided he wants to be a commercial pilot. He is now eighteen and has a clutch of A-Levels. He studied diligently at school and dispensed with thoughts of a gap year or even going to university. All he wants to do is get his pilot's licences and join an airline and earn money.

It was a difficult conversation that you had with him when he explained that qualifying as a pilot was unlike any other type of professional training or higher education course in Britain, and that for reasons he didn't understand there are no caps on the tuition fees, no tax breaks, and no government backed student loans. Strange, you thought, that the government is happy for history of art degrees to be subsidised but not training for a serious job like an airline pilot. You wondered about cadetships but discovered that although there some were from time to time (and these generally skewed towards young women) right now no British airline had any scheme running.

The bottom line was that if Harry was to train as an airline pilot, he was going to need somewhere between £100-120,000. It was unrealistic to tell him to get a job and save the money – that would take years. So, you talked to your wife, and you made the enormous decision to eat into the equity on your three bedroom house and raise £100,000 by re-mortgaging. Harry would pay you back by covering the extra cost of the mortgage once he had a job.

If only Harry had wanted to be a doctor, you mentioned to a chum, he would have had to train for five years, but the fees are capped and covered by a

student loan, and his total liability would come to around £60,000. Though, you added, foreign medical students training in Britain are charged around £50,000 a year for their five years of training.

Harry trotted off to a nearby full-service Approved Training Organisation and applied to join the next ATPL course. You took a look at the company and were satisfied that they were kosher. They had been in business for twenty years and had produced plenty of young pilots, all of whom appeared to get jobs with airlines soon after completing their courses. So, you took a deep breath and transferred £70,000 to cover the first few stages of Harry's pilot training.

Harry's training was going really well; he was forging ahead with his studies and ground exams, and he'd gone solo after fifteen hours. You clearly made the right decision to help your boy, and, not that you'd say this openly, getting a proper qualification that led to a proper job did seem a bit more sensible than spending three years learning about the history of art.

So, you took a deep breath and transferred £70,000 to cover the first few stages of Harry's pilot training...

You yourself were once an apprentice mechanic, and twenty-five years later could afford – but only just – a hefty mortgage as a workshop supervisor.

And then the unimaginable. It was at breakfast. Harry had turned pale and was close to tears. With an unsteady hand he passed you his phone. 'Dear Harry,' the email read – it was from the owner of the flight school, Jeff, 'It's with a very heavy heart that I write to you all. I can find no one prepared to invest directly into the flying school or to buy the company out of Administration.

We have come to the end of the road, and we ceased trading this evening. I will contact the CAA in the morning. There will be no lessons (Simulator or Ground School) tomorrow or again. I am very sorry. I have

already made considerable personal investment to try and keep the flying school going. I have nothing left to give. We are working with an Insolvency Practitioner and their details will be available on our website from tomorrow. We are not in a position to make any immediate refunds. My apologies – this is an email I hoped never to write.'

I need not go on. This is exactly what happened to one student, to two parents and one school just a couple of weeks ago. Think for a moment through the consequences. Life changing, certainly.

There have been three recent closures of flying schools in UK. One seems to be fraud, but the other two are just run of the mill business casualties. There are rumours that other schools here are perilously close to sharing the same fate. From a human perspective the poor students are the most affected, especially those who have paid hefty deposits – and paying a deposit for an academic course should not be controversial – trainee foreign doctors hand over millions a year to our universities for their courses.

I am no fan of big government and I definitely don't think, as some have suggested, that the CAA should be

on the hook for lost deposits. However, I absolutely do think the CAA should lobby for a simple legal change in one of our education acts, possibly by Statutory Instrument, to require ATOs to provide a commercial insurance protection for any of their students who has deposited more than perhaps £5,000 with an ATO. I don't think it would be onerous to expect the CAA to ask the Department for Transport to talk to their counterparts in government to make this happen. It would save a lot of ruined breakfasts.



TIM COOPER

Tim founded a bush airline during a twenty-year stint in Uganda. Nowhome flying aerobatics (badly) from Goodwood, he has a PPL 'and lots to learn'

Books & Gear

Tracey's defence ● B o B movie critique

'Bird' battles on...

Bird – Three extraordinary flights. One woman's remarkable journey by Tracey Curtis-Taylor mirrorbooks.co.uk £16.99. Hardback, 336 pages, colour illustration

Tracey Curtis-Taylor's name first came into prominence in 2013 when she retraced Lady Mary Heath's 1928 solo flight from South Africa to England in a Boeing Stearman biplane. Tracey's trip earned wide coverage in the press and became the subject of a popular television documentary. It also won her acclaim and prizes, notably the Light Aircraft Association's Bill Woodhams Trophy, awarded primarily for 'a feat of navigation'.

In time, while Tracey's high-profile flying ventures continued there was a growing kick-back from within the GA community, many members of which thought that flying these routes with GPS navigation equipment and often an experienced pilot in the other cockpit wasn't an achievement in the same league as Lady Mary Heath's or Amy Johnson's. An increasingly bitter exchange developed on the flying forums, one side claiming Tracey was less than honest in the way her flights were presented and Tracey's camp that this was all part of a reactionary male attitude about women in aviation. Infamously, members pressed the LAA to withdraw the Bill Woodhams Trophy, which Tracey felt was an injustice.



Almost a decade later, that flame is still burning and restating her case forms a substantial part of Tracey's new book, *Bird*. It is well-written and nicely presented – and a revealing read whether you agree with the author or her detractors. – **PW**

... and the Battle fought on the big screen

The battle of Britain on the Big Screen by Dilip Sarkar pen-and-sword.co.uk £22. Hardback, 226 pages, black-and-white illustration

People with even a passing interest in (mostly old) movies about the Battle of Britain will find great fascination in this book, written by a distinguished historian who has both met and interviewed many of the 1940s RAF pilots involved and has a clear understanding of both films and film making.

The movies – *The Lion has Wings*, *The First of the Few*, *Angels One Five*, *Reach for the Sky*, *Battle of Britain* and (perhaps slightly incongruously as it was a BBC docudrama shown only a limited number of times on a big screen) *First Light* – are each given a chapter. Sarkar analyses these productions in an

unique manner I believe he deserves credit for inventing, giving each of the events and scenes he describes a time reference – '1.16.30' for example denoting one hour sixteen minutes and thirty seconds from the start – and contrasting what's seen on the screen with what happened in real life.

It may all sound a bit dry and... well, analytical but it really isn't – I would say the effect is more like sitting through these films with an extremely knowledgeable and thoughtful companion giving the kind of commentary that not only enhances your enjoyment but deepens your understanding about both the movies and the Battle. Highly recommended! – **PW**



MISSED AN ISSUE?



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Alpi's four-seat wonder

It can get out of a short strip with four adults and full fuel, and then cruise at up to 162kt. Is there a trick?

Words: Eugenio Facci

Photos: Alpi Aviation

PHOTO: LUCA OCARETTI / ALPI AVIATION





▲ The cowling can be opened quickly by one person by removing two pins

▲ The compact and powerful (141hp) Rotax 915 iS turbo engine

I'm pulling back on the stick as hard as I can. The nose is high, I have full power, and the stall warning has been on for maybe a minute now. But it's only a warning, because we're flying. In fact, we are *climbing*, and I have full aileron control. It's something that I have never experienced in another aeroplane, and it does make me wonder if there is some sort of trick at work here.

But 'the trick', it turns out during my visit to Alpi Aviation's headquarters, is simply good engineering applied to a project with a clear goal: building a family aeroplane that can cruise fast and that can operate from small grass airstrips. The Pioneer 400 debuted in 2009 with a 100hp Rotax engine, and over time evolved with the adoption

of more powerful powertrains (see our November 2011 issue for a test of the Rotax 912 version). The latest iteration that we are flying today is powered by the Rotax 915 iS turbo powerplant: it is a response to market demand, its 141hp giving an extra buffer of safety and power for short-field operations.

"I wanted an aircraft that I could use to take my family on trips" tells me Corrado Rusalen, the founder of Alpi Aviation and designer of the Pioneer line. "Being in Italy, where we have a lot of grass strips, I needed to be able to operate from small airfields. Also, I wanted to go places, so I wanted a high cruise speed. And finally, I would be flying in the aircraft with my wife and children, so I wanted it to be extra safe".

In terms of safety, the idea was to take out of the flying equation some of the most frequent dangers of general aviation. That is why, for instance, the Pioneer 400 will not allow you to enter an after-takeoff 'distraction stall' with full power, and it will simply continue to slowly climb in that scenario, even if you keep the stick full aft.

The solutions adopted to have a high cruise speed were a retractable undercarriage and variable pitch propeller – obviously combined with the sleek aerodynamics typical also of other Alpi models. And for short-field performance, a lot of thought went into weight limitation, using a careful balance of wood and carbon-fibre to maximise the strength to weight ratio.



▲ The Pioneer 400-915 iS runs on mogas, but it can use leaded avgas for short periods of time if needed

▲ Obviously not as roomy as bigger American tourers, the Pioneer 400 is nonetheless a true four-seater that can takeoff with full fuel and four adults



IMPRESSIVE PAYLOAD

On that note, one thing that stood out for me, as I studied the aircraft before the flight, was the ratio of Maximum Takeoff Weight to Empty Weight: an impressive 1.77, much higher for instance than the Pipistrel Panthera (1.61) and Cessna 172R (1.45). When empty, in fact, the Pioneer 400 weighs 480kg. You can then put four adults weighing 70kg each, baggage (15kg) and 97 litres of mogas – almost full fuel – before you hit the MTOW of 850kg. That will carry you for four hours and thirty minutes at 125kt (TAS), and give you thirty minutes of reserves. If you ditch

the 15kg of baggage, you can take four adults and full fuel.

On the day of our test, I try the aircraft almost fully loaded to re-create the most demanding conditions. Two Alpi Aviation engineers kindly volunteer to sit in the

back and forth from Italy. With seventy litres of mogas, I calculate our takeoff weight as 830kg (twenty kilograms lower than MTOW), on a day with rather standard conditions: OAT 11 degrees, QNH 1016 and airport elevation 560ft

(we are flying at Rivoli Osoppo airport in north-eastern Italy, where all Alpi Aviation testing takes place).

You board the aircraft from the front, helped by a step in front of the wing. The gull-wing

doors opening upwards make it easy to enter, and both pedals and seats can be adjusted for maximum comfort. Once seated, the pilot view is very good, both

The latest iteration of the Pioneer 400, powered by the turbocharged Rotax 915iS, is a response to market demand

back while in the front I fly with Alpi's sales representative Ed Dockendorf – who is based in Luxembourg and routinely uses the aircraft for quick trips



PHOTO: EUGENIO FACCI



You enter the aircraft from the front of the wing, aided by a small metallic step. The gull-wing doors make entry easy

looking out and in terms of seeing all instruments on the panel. There are a few things to note here, and to get used to if you don't know the aircraft. One of the levers on the engine panel, for instance, is actually not related to the engine but is the cabin heat lever – I initially got confused reading 'heat' underneath it, and assumed incorrectly that it was the carburettor heat control.

There is a bit less room here than in a typical American four-seaters (like the Cessna 172 I usually fly), but nonetheless space can be used very well here too. For instance, Ed flies with a very high-spec four-screen digital cockpit, which

can be set up without sacrificing any instrument – and actually keeping an analogue backup in the form of one ASI and one altimeter. Specifically, from left to right, we will be flying with SkyDemon showing on a large iPad, a Dynon PFD, a Garmin backup, and a Dynon MFD.

REDUNDANT ALTERNATORS AND BATTERIES

One interesting feature of this setup is that the devices can be linked to work together, so for instance you can have the SkyDemon information shown on the Dynon PFD screen. The Pioneer

400 also has an autopilot with a variety of modes (Heading, Nav, and Vertical Nav for instance), and you can actually practice airline-style navigation with it. Ed in fact tells me that this setup minimises his cockpit workload, and it enables him to do frequent long flights all around Europe that would otherwise be much more tiring.

Another thing to note is that electrics are important in this aircraft, both for the engine CDI system and electric fuel pumps. Consequently, the Pioneer 400 is equipped with two generators, and two batteries for added redundancy. Startup is quite simple: you put power

PIONEER 400-915 IS

Dimensions

Length	7.00m
Wingspan	8.80m
Wing area	11.20sq m

Weights

Empty Weight	480kg
Max Takeoff Weight	850kg
Fuel capacity	110 lit

Performance

Max cruise	162kt
(TAS at FL100)	
Stall speed	43kt
Takeoff run	250m
Best climb rate	950fpm
Max range	600nm
Glide ratio	13:1

Engine & Propeller

Rotax 915 iS (turbo) producing 141hp and driving a 3-blade variable pitch CS propeller

Manufacturer

Alpi Aviation
www.alpiaviation.com

Price

£217,000 Ready To Fly
£118,000 Kit
[glass cockpit; VAT not included]

► The model we flew has a very high-spec digital cockpit with (left to right) an iPad for SkyDemon, a Dynon PFD, a Garmin backup, and a Dynon MFD. The standard setup has two Dynon screens (PFD and MFD)



to idle, prop full forward, and the boost pump on, then engage the starter, with the usual oil pressure checks to follow.

Taxying does not take much effort on the pedals, which are light and comfortable. At the holding point of Runway 21, we action the Before Takeoff checklist, which includes a check of the electrics, and of the two electric fuel pumps. On the runway (which in Osoppo is a concrete runway) I line up as far back as I can for distance measuring and then apply full power without holding the brakes. We quickly build up speed and at 55kt I start the rotation, which requires a fairly firm pull for liftoff. We leave the



▲ The autopilot has a variety of modes (NAV and V-NAV for instance) that allow you to do airline-style navigation

ground as the taxiway goes past on my right (310m of takeoff run) and I select gear up. We initially climb at 70kt with takeoff flaps, obtaining a 650fpm rate of climb. After raising the flaps, we reduce MAP to 40in and bring RPMs to 5,300 for a normal climb, accelerating to 90kt and obtaining a 800fpm climb rate.

As we climb, I notice that the aircraft requires a fair amount of rudder, and I realise that the rudder trim (a fairly rare feature in light aircraft) is actually quite useful in the Pioneer 400 - which is also equipped with aileron trim. Once level at 4,500ft, I start doing some gentle turns, and then some steeper ones.

PHOTO: EUGENIO FACCI





PHOTO: EUGENIO FACCI

- ▲ On the model we flew there were no toe brakes on the right-hand side but you could use the main brake lever between the seats (which also serves as parking brake)



PHOTO: EUGENIO FACCI

- ▲ If both alternators fail, and the main battery runs out, you still have power from the backup battery, activated after lifting the guarded switch



PHOTO: EUGENIO FACCI

- ▲ In the centre console, between the two front seats, you also find the trim controls (elevator, rudder, aileron), the flap lever, and the emergency parachute



PHOTO: EUGENIO FACCI

- ▲ The pedals, like the seat, can be adjusted for maximum comfort



PHOTO: EUGENIO FACCI

- ▲ The gear handle with its lights sits on top of the panel, in front of the left seat

The controls are well balanced and harmonised and, in fact, I find the aircraft quite striking for its adaptability: it feels like a mini-fighter aeroplane when you want it to be agile, and firm and stable when you want it to be settled. I have the impression that, actually, the Pioneer 400 would be a

good platform for IFR training, if Alpi ever wanted to market it for that use.

Next on my list is slow flight. I pull back the power until we reach 60kt, then readjust it to maintain speed and altitude. We are almost full aft trim, and again here the controls behave as expected, somewhat mushy but responsive, and

with no adverse yaw. We then slow down for a clean stall, which comes at 52kt with a very light buffet and no wing drop. But the 'safe stall' characteristics I mentioned earlier do not really allow you to induce a full stall: despite pulling firmly on the stick, I merely enter a slow descent with the nose nodding every

- ▲ Another Pioneer 400 served as cameraship during the flight test, flown by Alpi's founder Corrado Rusalen



PHOTO: EUGENIO FACCI

Unusual for a light aircraft, the Pioneer 400 has a rudder trim (which Eugenio found particularly useful during climbs)

now and then. The same happens with full flaps, when we 'stall' at about 46kt, again with a light buffet and no wing drop.

To remain in our work area, we now turn back south. The mountains ahead, where the Italy/Austria border is located, are getting higher, while to the south we need to stay clear of the Aviano airspace where both the USAF and the Italian Air Force (the latter with its aerobatic team, the Frecce Tricolori) operate. Still flying at 4,500ft we set manifold pressure 29in and 5,000rpm – the economy cruise setup – which gives us a speed of 118kt indicated (126kt TAS at this altitude) and a fuel flow of twenty litres per hour. For a normal cruise, we increase power to 34in MAP and 5,200rpm, accelerating to 124kt indicated (135kt TAS),



PHOTO: EUGENIO FACCI

and a fuel flow of 25 lph. It is possible to cruise significantly faster, but that makes the engine obviously more thirsty: with a MAP of 40in and 5,500rpm we fly at 140kt indicated (150kt TAS), the engine

using 29 lph at this speed – though Ed tells me that he typically cruises at 7,500ft and 145kt TAS, using 25 lph.

Going back to the airfield for a few circuits, Ed explains his workflow for



Born out of passion



Alpi Aviation has made more than one thousand aircraft to date

Alpi Aviation was created in 1999 by Corrado Rusalen, a flight instructor and engineer with 8,000 flight hours and a passion for sleek design and airframes combining wood and carbon fibre. The company's first model, the two seat Pioneer 300, debuted the same year (see our flight test in the October 2018 issue), followed over the years by the Pioneer 200, the 330 (aerobatic) and the 400, the first four-seater manufactured by Alpi.

The firm is based in Pordenone (in north-east Italy about sixty miles from Venice), in the vicinity of the US Air Force Aviano airport (where F-16s are based) and the Italian Air

Force base of Rivolto – where the Italian aerobatic team trains. It is a region rich in general aviation tradition, not far from the headquarters of Pipistrel and Fly Synthesis.

One of the current projects of Alpi is a twin-engine piston called Pioneer Twin, which may be developed into a hybrid model at a later stage, and whose mock-up was already unveiled in Friedrichshafen. As of today more than one thousand Alpi Aviation aircraft have been sold, and they are flying in thirty-one countries around the world. The model shown in this test flight can be bought directly from the company and registered in the UK as a Permit To Fly aircraft.



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Sleek aerodynamics give the 400 a high cruise speed, while the fairly large wing area allows the aircraft to operate from short strips

the approach. First, you slow down to the white arc. Then, on downwind, you work from top to bottom on the central panel, lowering the landing gear first, then selecting approach flap, and finally advancing the prop lever fully forward. In this configuration the fast and sleek Pioneer 400 becomes a lot more draggy (in fact I initially get caught off guard, slow down too much, and end up needing quite a bit of power to get back to my target speed).

On downwind Ed aims for 85kt, which becomes 80kt when we turn base and start descending. On final, we select landing flap and settle on 75kt which, on the narrow concrete runway of Osoppo, looks a lot faster! In any case, I find it fairly easy to keep

the aircraft on profile and on speed, and I am actually quite impressed by how settled the Pioneer 400 feels. In terms of approach stability, it does not feel at all like an aircraft with an empty mass of 480kg, but rather like a Piper

It feels like a mini-fighter aeroplane when you want it to be agile, and firm and stable when you want it to be settled

Arrow or Cessna Skyhawk, or even something heavier. After a normal flare, we touch down gently and come to a complete stop in what I calculate to be 280m of ground run – which obviously would be a bit less on a grass runway.

Did I like the Pioneer 400? Yes, a lot. It is a pleasant and very versatile aeroplane, which does extremely well what it was designed for: touring. Its combination of four seats, large payload, fast cruise, low fuel consumption and

short-field capability is a real winner, and it's no surprise that other GA manufacturers are now trying to go after the same market (Flight Design, for instance, with its F4 four-seat model).

In fact, I am surprised that I don't see more Pioneer 400s flying around the world, and I ask Ed why that is the case. He says that it is because many pilots do not even know this aircraft exists. Well, maybe this article will help with that!

Safety Matters

Safety Matters and Safety Briefs are based on the AAIB Bulletin and UK AirproxBoard reports, with additional material from the Australian Transport Safety Board and/or US NTSB

Unexplained accident

Aircraft Type: Flight Design CT2K

Date & Time: 24 March 2022 at 1400

Commander's Flying Experience: PPL, 2,677 hours
(of which 1,621 were on type)

Last 90 days: 20 hours

Last 28 days: 9 hours

The pilot was a member of a small aviation group that flew from Temple Bruer airstrip, Lincolnshire, which is located just outside the northern Aerodrome Traffic Zone (ATZ) boundary of RAF Cranwell. On the day of the accident, he planned to fly from Temple Bruer to Beccles Aerodrome, Suffolk, which he had visited on two previous occasions.

The weather for the route was clear with light winds from the east. The pilot booked out at Temple Bruer and took off at 1246, climbing on a south-easterly heading. Three minutes later the pilot informed Cranwell ATC that he was returning to Temple Bruer with a 'slight problem'. Approximately one minute later he informed ATC that the problem had been solved and that he was continuing towards Beccles. At 1350 he contacted Beccles Radio requesting the airfield details; the radio operator responded that Runway 09 was in use and that the wind was from the east at less than five knots. The pilot positioned to join downwind then established on a final approach, reporting both positions on the radio. The radio operator replied to the final call, passing the wind direction and speed.

Eyewitness accounts described the initial part of the aircraft's final approach as 'unstable' in roll and

pitch, becoming stable before it touched down on its mainwheels approximately fifty metres in from the threshold. The aircraft was then observed to bounce to around ten feet into the air before touching down again on the nosewheel. It bounced a second time and pitched markedly nose-up, the angle reaching 45° as it appeared to be climbing away. On reaching around 100ft above the runway, witnesses described the aircraft veering to the left and rolling to approximately ninety-degree angle of bank before the nose 'dropped' and the aircraft fell to the ground in a field adjacent to the runway.

No witnesses interviewed by the AAIB could recall hearing sounds of the engine power increasing after either touchdown. There were no reports of turbulence on final approach on the day of the accident.

The aerodrome rescue and firefighting service vehicle arrived quickly and found the pilot in the left seat with his harness in place, still breathing but unresponsive. Recognising that they would not be able to release him safely from the wreckage, the RFFS crew continued to provide reassurance to the pilot and monitored the aircraft for signs of fire until further assistance arrived. They also established that the aircraft was fitted with a ballistic parachute recovery system.

An ambulance arrived at 1404 followed by the local fire brigade at 1412. The Helicopter Emergency Medical Service (HEMS) arrived at 1420. The HEMS doctor determined that the pilot had succumbed to his injuries and died at the scene. Although there was speculation that the pilot's age (he was 87) may have been a factor in this accident, the post-mortem found no indication of medical impairment or incapacitation.

Wear your safety harness!

Aircraft Type: Pegasus Quik flexwing microlight

Date & Time: 6 August 2022 at 1355

Commander's Flying Experience: NPPL, 306 hours (of which 90 were on type)

Last 90 days: 2 hours

Last 28 days: 1 hour

The pilot arrived at Harringe Court Farm airstrip, where the aircraft was based, at about 1000 on the day of the accident. He prepared the aircraft for a planned solo flight to two local airstrips, to both of which he had flown before. The weather in the morning was described as generally good, although there were reports of some thermal air currents coming off the hill on which the airstrip was positioned. The pilot reported he was used to such conditions and, whilst

they were uncomfortable at low level, the effects soon dissipated during the climb after takeoff.

The pilot had no recollection of the accident flight due to the injuries he received. It was, however, possible to establish a record of his flying activities from information recovered from the aircraft's navigation unit and the pilot's mobile phone. The pilot took off from Harringe Farm to the north at 1234. The data recovered showed that he

conducted a local flight, landing at two other airstrips, before returning to Harringe Farm at 1345.

A witness at Harringe Farm saw the aircraft carry out an apparently normal final approach to land in a northerly direction. The weather at the time was described as good, with just a light breeze. The witness reported that after touching down, the aircraft bounced to a height of about three feet before touching down again. On doing so, the witness described seeing the left rear wheel of the tricycle undercarriage lift slowly into the air. The witness expected to see it settle

onto the ground again, but it continued to rise until the aircraft's right-wing tip caught the ground, bringing the aircraft abruptly to a halt on its right side.

Members of the public seeing the accident came quickly to assist the pilot, who had been seriously injured. The emergency services were called, and the pilot was transferred to hospital by air ambulance.

No faults with the aircraft were found during the examination. The damage to the propeller blades indicated that the engine was running at low power. The minor damage to the trike showed that most of the impact forces were

absorbed by the wing.

Although the possibility of the pilot's helmet visor being damaged because of contact with the right A-frame upright was considered, the curved profile of the vertical line could only have been formed by impact between the visor and the front strut. As the pilot had not worn the shoulder strap, his upper torso would not have been restrained during the impact and the visor would only have provided limited protection to his face. It is probable that both these facts resulted in the pilot sustaining serious facial injuries during the impact.

Inherent risks of low-level aerobatics

Aircraft Type: Pitts S-1S

Date & Time: 26 August 2022 at 0904

Commander's Flying Experience: CPL, 1,978 hours
(of which 530 were on type)

Last 90 days: 26 hours

Last 28 days: 8 hours

The accident occurred on the first of two aerobatic practice flights the pilot had planned to undertake overhead Shobdon Airfield. While the second flight was to be a rehearsal of the display sequence the pilot intended to fly at a private event on 28 August, the investigation did not find evidence as to the pilot's detailed intentions for the accident flight.

The Pitts S-1S took off from Runway 26 at approximately 0900, the pilot turned left on departure and climbed to position the aircraft south of the runway before commencing his aerobatic manoeuvring. Mobile phone video taken by an eyewitness showed the aircraft completing three distinct aerobatic manoeuvre combinations before, when approaching the eastern end of the airfield, it pulled up into a vertical climb from approximately 420 ± 50ft agl on a broadly easterly heading. While the aircraft did not stay in the video frame for all the subsequent manoeuvring, it could be seen that it was rolled left through approximately 450° as it climbed. The nature of the rolling motion indicated the pilot likely had some left rudder applied during the roll because the aircraft's longitudinal axis was not closely aligned with the aircraft's upward flight path. The aircraft continued climbing until reaching an estimated apex height of 1,100 ± 200 ft agl. At the top of the manoeuvre, it was banked to approximately 90° right wing low with the nose 30°- 45° above the horizon. The nose of the aircraft then dropped progressively lower while the bank was maintained. During the transition from nose-up to nose-down, the nose appeared to fall more due to gravity than as the result of significant rudder application generating yaw.

As the nose dropped through an estimated 45° nose-down, the aircraft began rolling right and the nose dropped further to approximately 80° nose-down. The aircraft continued rolling right, rotating through 360° in approximately two-and-a-half seconds. Audio recording from the mobile telephone

footage corroborated eyewitness evidence that the engine rpm reduced, probably to idle, shortly after the aircraft began rolling during the descent. Video footage showed the aircraft stopped rolling after approximately one-and-a-quarter turns, at which point it was pointing vertically down, if not slightly inverted. At this stage it was approximately 400ft agl. As the roll stopped, the aircraft's pitch attitude started to decrease, and the pilot appeared to be attempting to pull out of the dive. This pitching motion continued only briefly, stopping abruptly just before the aircraft diverged rapidly in roll to the right from about 200-250 ft agl. The divergent right roll continued until the aircraft struck the ground in an almost vertical attitude, just over two seconds later. From the apex of the climb to impact with the ground took approximately nine seconds, and only seven seconds from the roll starting as the aircraft's attitude passed through 45° nose-down.

The airfield fire and rescue crew reached the accident site less than three minutes from the alarm being raised and shortly thereafter began fighting what remained of the intense post-crash fire. The pilot did not survive the initial impact.

'The accident occurred after control was lost when an autorotative roll [sic] developed as the aircraft yawed at the top of a vertical climb,' concluded the AAIB. 'Low airspeed during the yaw would have reduced the aerodynamic control available to the pilot such that he could not prevent the aircraft entering the subsequent spiral dive. The entry conditions to the manoeuvre gave little or no safety margin when the aircraft began to dynamically diverge from the expected flight path. While the pilot was able to regain control of the aircraft, by the time he did so there was insufficient height remaining in which to effect a safe recovery.'

While the investigation could not determine why the pilot was unable to prevent the aircraft from entering the spiral dive, 'starting the climb with more height and/or speed would likely have increased the pilot's chances of avoiding the loss of control and/or being able to recover from it safely.'

'The investigation was not able to determine what the pilot's contingency criteria were, but this accident serves as a reminder that conducting low level aerobatics comes with inherent risks when manoeuvres, planned or unplanned, do not proceed as expected.'



Trim comes unstuck

Aircraft Type: Extra EA 300/L

Date & Time: 19 June 2022 at 1555

Commander's Flying Experience: CPL, 4,641 hours (of which 524 were on type)

Last 90 days: 39 hours

Last 28 days: 22 hours

The pilot had departed from Duxford Airfield to conduct a public aerobatic display routine in a formation with three other Extra aircraft. About seven minutes into the routine, as the aircraft started to pull up into a formation loop, the pilot heard a loud banging noise from the rear, and his aircraft started to oscillate in pitch by about $\pm 20^\circ$. The control stick was being moved fore and aft without the pilot's input, in sync with the pitch oscillations. The control forces were sufficiently low that he was able to control the stick and to manoeuvre the aircraft away from the rest of the formation.

The pilot stated that he was alarmed by the banging noise, and it got progressively worse. The pilot suspected a structural failure of some part of the elevator control system, but he could not see the elevator. He put the aircraft into a climb and manoeuvred away from the display site in anticipation of a loss of control and needing to bail out. About 25 to 30

seconds after the incident had started, the banging and the pitch oscillations stopped. The pilot requested that one of the other formation pilots inspect his aircraft, and they reported that the elevator trim tab had detached and had embedded itself in the right side of the rudder. They also reported damage to the rudder and fin.

The pilot carried out a low-speed handling check at 4,000ft and found that the aircraft was fully controllable at normal approach speeds, so he positioned for a long, straight-in final approach to Duxford and landed without further incident.

The elevator trim tab had detached in flight due to a combination of the wrong type of hinge being fitted (it had only one third of the adhesive bonding area of the type of hinge that should have been fitted) and insufficient adhesive having been applied. How, when and where the incorrect hinge was fitted could not be determined.

Cracked hinge tabs were found in other Extra aircraft, which indicated that in other instances insufficient adhesive had been applied between the hinges and the tab structure. The aircraft manufacturer has published a Service Bulletin mandating more frequent visual detailed inspections of the trim tab hinge areas and has instructed the third-party trim tab manufacturer to ensure that sufficient adhesive is used when bonding the hinges.

Gust gets Global

Aircraft Type: Bombardier Global 6000

Date & Time: 7 April 2022 at 1625

Commander's Flying Experience: ATPL, 7,200 hours (of which 1,350 were on type)

Last 90 days: 34 hours

Last 28 days: 0 hours

The aircraft departed from Biggin Hill Airport at 1605 for a positioning flight to London Luton Airport. The flight was crewed by two pilots with no other crew members and no passengers on board. The commander was a training captain, and it was the co-pilot's first flight on the aircraft type. The co-pilot was PF ('pilot flying' – the pilot handling the aeroplane).

The aircraft was radar vectored for an approach at Luton to Runway 25. The wind given on the ATIS before the approach commenced was 290/27G38, which gave a crosswind component of 23 knots, including the gust element. This was below the maximum demonstrated crosswind for the aircraft type.

The aeroplane was configured and began a stable approach on the ILS. The wind given by Luton ATC when the aircraft was cleared to land was 290/22G36 which gave a crosswind component of 22kt. At 100ft radio altitude (RA) the commander recalled that the aircraft began to be affected by what he considered to be turbulence generated by the nearby buildings. However, although the aircraft was deviating slightly from the centre of the ILS, he considered it to be well within acceptable boundaries.

At the 50ft RA call, the autothrottle system (ATS) began to retard the throttles, as designed. At some point after this the commander described how he suddenly felt the aircraft becoming unstable and beginning to drift to the left. He decided that the aircraft was no longer in a suitably stable state to land and, taking control from the co-pilot, applied full power by pushing the throttles forward. The aircraft rolled to the right before the right main gear touched down momentarily. As this happened, the right wingtip contacted the runway. The commander applied full

left control inputs and the aircraft rolled rapidly to the left and then climbed away from the runway. There were no control difficulties after the aircraft began climbing, and the subsequent approach and landing were completed without further incident.

After shutdown, the commander noticed that there was damage to the right wingtip, flap fairing, leading edge slat and aileron. There was no damage to the left wing.

'The commander was conducting line training for the co-pilot who was new to the aircraft type,' observed the AAIB. 'Although the operator had no crosswind limitations for inexperienced pilots, and therefore there was nothing to prevent the co-pilot flying the approach, the commander subsequently faced taking control of the aircraft in a low-energy state close to the ground. Whilst the wind data from the airport did not show any large changes in wind speed or direction, it is possible that the aircraft was caught by some low-level turbulence or wind changes that did not reach the anemometer.'



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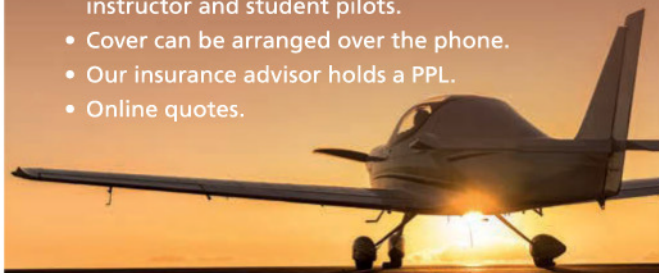
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QFI LOGBOOK

Negative skill transfer

Negative skill transfer? Who knew that was a thing? Having been flying long before the 'system' discovered Human Factors and Performance, when such phrases first started to appear I'm afraid that most of us junior RAF pilots took the opportunity to recover from a good hangover during such lectures – it was treated with a somewhat derisory attitude. I must admit I still struggle with some of the catch phrases and buzz words associated with it all. However, with maturity comes wisdom and slowly we awoke to the fact that this was good stuff, explaining things we'd been aware of for ages – and one of these was now called negative skill transfer – something that had been causing accidents for decades before it had a name!

As you become competent as a pilot, your brain begins to automate things, hands completing actions without you consciously commanding them to. This familiarity is good, but ingrained actions learned in one aircraft may not be appropriate to every type, and there's a risk in something new you'll do the wrong thing before your brain realises.

When I was teaching at the Empire Test Pilots' School we had a couple of Agusta 109 helicopters. Entering autorotation in these by simply lowering the collective gave unrealistic rotor speed characteristics, as the engines still provided enough residual power to limit rotor speed decay when it would have become critically low in a true engine failure scenario. These engines had FADEC (fully automatic digital control) set by three-position rotary knobs, just like those you find on a cooker. Consequently, to simulate a double engine failure on entering autorotation, the instructor would move these from the 'flight' position the 'ground' position (the engine in effect just idling). To prevent you going past ground position to 'off', shutting the motor down, there was a gate and to get past it you had to push in the knob. Fool proof!

I was training up another instructor,

such that he could teach on the 109, so I was flying as Bloggs whilst he ran the sortie. The snag was that you had to be moderately swift in retarding the second motor, as if you dithered after 'failing' the first one, the FADEC would start rapidly increasing power on the second motor as it believed its chum had failed. This was causing my man an issue, as he was a bit slow, and the second engine kept winding up. His workload was increasing and the frustration building. So, on about attempt four, he swiftly and dexterously whipped the first motor to the off position, pushing in the knob and turning it past the gate. I heard and saw the motor shutting down and said something he didn't hear. I also put my hand out to guard the second knob but he, thinking I was going for it as he was again too slow, batted my hand out of the way and shut that one down too! Brilliant, there we were, not too high with a self-inflicted total engine failure, and all he was doing was looking at me open mouthed and repeatedly saying sorry. I lowered the gear, identified a suitable field and gave him control telling him to land in that one whilst I concentrated on restarting the engines. Thank the Gods for FADEC, as I got the first one going with height to spare, and the second in the climb. We'd have been in the field with earlier generation non-FADEC motors.

So, negative skill transfer: what he did was push the 'cooker knobs' in his frustration. Why? Well on the aircraft he'd instructed on before, you had to *pull* similar knobs to get past the gate, so he'd had subconsciously applied a push, as doing so on his previous type ensured you didn't shut them down! He'd transferred a previously ingrained skill, with negative results on the new type. This was as a result of self-induced pressure meaning he was working close to maximum capacity.

Often though, it's operating 'under arousal', that causes such issue. I'm lucky to fly a lot of older machines for owners, and usually they all wish them out after the winter such that

I'm busy in the spring flying all sorts of stuff. Looking at my logbook for a couple of years ago, in the two weeks before what I'm about to describe, I'd flown a DH Dragon, Stampe, Puss Moth, Magister, Chipmunk and a Fox Moth. All of which have a brake lever low on the port side of the cockpit. I'd also flown a Warrior and Condor, but as I was instructing, I was using the central brake lever with my left hand. I'd also flown a Harvard and a few helicopters. OK no brake levers on these, but it's your left hand that operates the undercarriage, flaps, nosewheel locks and so on. Eventually I managed to get aloft in my old BA Swallow, an aircraft I'd owned and flown for well over fifteen years by then – as familiar as an old glove. After a wonderful low-pressure, relaxing float around the local area I came back to the strip and made one of those rare landings when it's difficult to detect the actual touchdown. As we slowed the Swallow gradually wandered toward the runway edge despite rudder. I casually leaned forward and found my left hand on the manual fuel pump! A frantic swap of hands and I applied the brake which, you've guessed it, is on the right-hand cockpit wall in the Swallow! Negative skill transfer, due I suggest to being too relaxed. Would exposure to the Swallow earlier in the month have helped? I think not, just being less casual was the answer.

This can catch anyone, any time. But in my experience those most prone to being caught are either newly qualified private pilots who learned on one type and are converting to something different soon afterwards or private owners who've purchased something new after years of just flying their old machine. Beware negative skill transfer – it really is a thing!



CHARLIE HUKÉ

Sixteen years in the RAF, a decade as a civilian ETPS instructor and latterly commercial, Charlie has instructed on the majority of the 220 odd types he's flown

Calendar

Compiled by Paul Fiddian & Peter R March

Remember to check with the organiser before setting out – events may be changed at short notice

To see the
monthly calendar
online, visit
www.pilotweb.aero

UNITED KINGDOM

JUNE 2023

23-25 Draycot Farm, Swindon, Wilts, Great Draycot Farm Fly-in, draycotaerodrome.com

24 Easter Airfield, Ross-shire, Summer Fly-in, easterairfield.co.uk

24-25 Brighton, N Yorks, VAC Annual Visit to Brighton, realaero.com/bugle.html

24-25 Church Fenton-Leeds East, N Yorks, Battle of Britain Trophy and Grosvenor Cup Races, britishairracing.org

24-25 Fenland, Lincs, British Aerobatics McAully, Fenland & Cavendish Trophies, aerobatics.org.uk/events

24-25 IWM Duxford, Cambs, Duxford Summer Air Show, iwm.org.uk/airshows

24-25 Newark Air Museum, Winthorpe, Notts, Cockpit-Fest & Aeroboot, newarkairmuseum.org

24-25 North Uist, Outer Hebrides, Sollas Beach Fly-in, scottishaeroclub.org.uk/events-2/

24-2 July Bidford Airfield, Warks, BGA Bidford Regionals, soaringspot.com/en_gb/bidford-regionals-2023-bidford-2023/

25 Eshott, Northumberland, Machine Meet, facebook.com/eshottaerodrome

30-2 July Headcorn, Kent, Battle of Britain Airshow, bobairshow.co.uk

JULY 2023

1 AAC Middle Wallop, Hants, Wallop Wheels and Wings, armyflying.com/events

1 Compton Abbas, Dorset, Vintage Fly-in, comptonairfield.com/events

1 Teignmouth seafront, S Devon, Teignmouth Airshow, teignmouthairshow.co.uk

1-2 New Farm, Piddington, Northants, Back to the Future: SSDR and Sub-70kg Rally, PPR CGChamb@aol.com

1-2 Swansea Bay, Glamorgan, Wales Airshow, walesnationalairshow.com

1-8 North Hill, E Devon, Gliding Competition Enterprise, compenterprise.uk/2023.html

1-9 Shenington, Oxford, Shenington Regionals, members.gliding.co.uk/competitions/

2 Old Warden, Beds, Military Air Show, shuttleworth.org/events/airshows/

2 Seething, Norfolk, Seething Fly-in, seething-airfield.co.uk

7-8 Church Fenton-Leeds East, N Yorks, Private Flyer Fest Leeds, privateflyershow.com

7-9 Sleaf, Shropshire, Sleafkosh International Fly-in, shropshireaeroclub.com/events

7-10 Brighton, N Yorks and others, Aeronca Club of Great Britain Yorkshire Tour, aeronca.co.uk/events/

8 Balado, Kinross, Scotland, Fly-in & Hangar Party, baladoairfield.co.uk

8 Brighton, N Yorks, G-George Day, realaero.com/bugle.html

8 Concorde Conference Centre, Manchester Airport, Pilot Careers Live (North), pilotcareernews.com/live/north/

8 Enstone North (Grass), Oxfordshire, LAA Oxford Strut Cream Tea Fly-in, oxfordlaa.co.uk/creamtea

8 Monewden, Suffolk, Spirit of Boxted Fly-in & BBQ, suffolkcoastalstrut.org.uk

8-9 City of Norwich Aviation Museum, Norfolk, Wings and Wheels Weekend, cnam.org.uk/event-cnam/

8-9 Heveningham Hall, Halesworth, Suffolk, Heveningham Concours, heveninghamconcours.com

8-9 Leicester, Leics, British Aerobatics Club Event & Gunpowder Trophy, aerobatics.org.uk/events

8-16 Husbands Bosworth, Leics, BGA 18m Class and 20m Multi Class Nationals, members.gliding.co.uk/competitions/

13 Popham, Hants, Evening Fly-in & BBQ, popham-airfield.co.uk/events-calendar-2023

13-16 Goodwood, W Sussex, Festival of Speed, goodwood.com

14-16 RAF Fairford, Glos, Royal International Air Tattoo, airtattoo.com

15 Deenethorpe, Northants, Flexwing Fly-in, bmaa.org/information-library/events

15 Little Gransden, Beds, British Aerobatics Open Club Event, aerobatics.org.uk/events

15 Northrepps, Norfolk, VPAC Eastern Fly-in, vintagepiper.co.uk/events/

15 Old Warden, Beds, Summer Evening Picnic Air Show, shuttleworth.org/events/airshows/

15 Uttoxeter Racecourse, Staffs, Staffordshire Balloon Fiesta, staffordshireballoonfiesta.co.uk

15-16 Bodmin, Cornwall, Grasshopper Gathering: L-Birds meet Military Wings & Wheels, bodminairfield.com/events/

15-16 Church Fenton-Leeds East, N Yorks, Flying Legends Airshow, flyinglegends.com

15-16 North Coates, Lincs, Wings and Wheels, northcoatesflyingclub.com

15-16 Piddington, Northants, CFM Shadow Fest Owners Club 40th Anniversary Gathering, facebook.com/groups/263902687415672/events

15-16 Sandown, Isle of Wight, Midsummer Flamping Weekend, eghn.org.uk/calendar

15-16 Sherburn in Elmet, N Yorks, GA aircraft for Flying Legends, sherburaeroclub.com

15-16 Wolverhampton Halfpenny Green, W Midlands, 1940s Weekender, dangeroussheep.com/event/1940s-weekender/

20-23 Sleaf, Shropshire, British Aerobatics Advanced and Unlimited National Championships, aerobatics.org.uk/events

20-27 Nympsfield, Glos, VGC Vintage Glider Rendezvous, vintagegliderclub.org/events-rallies/

21-23 Oaksey Park, Malmesbury, Wilts, Luscombe Rally, facebook.com/groups/347862542503097/

22-24 Wingland Airfield, Spalding, Lincs, Short-Field Shenanigans, winglandairfield.wordpress.com/

22-30 Dunstable Downs, Beds, BGA Club Class Nationals, members.gliding.co.uk/competitions/

23 Eshott, Northumberland, Machine Meet, facebook.com/eshottaerodrome

23 Shobdon, Herefordshire, HAC Summer Competition, shobdonairfield.co.uk/events/

23 Stow Maries, Essex, Propwash: Festival of the Air, stowmaries.org.uk

23 Woodchurch, Ashford, Kent, Wings and Things, facebook.com/profile.php?id=100086002723262

27-30 Compton Abbas, Dorset, Spitfire Weekend 2, comptonairfield.com/events

28 IWM Duxford, Cambs, Duxford Flying Day: The Americans, iwm.org.uk/airshows



The Royal International Air Tattoo, the world's biggest military air show with more than 24 air arms taking part, is being held at RAF Fairford on 14-16 July

29 Otherton, Staffs, Aeroprakt Fly-in, othertonairfield.com
29-30 Easter Airfield, Ross-shire, LAA Highland Strut Fly-in, scottishaeroclub.org.uk/events/
29-30 Eshott, Northumberland, Northumberland's Revival Weekend, facebook.com/eshottaerodrome
29-30 Middlezoy, Somerset, Somerset Aerofest, mzaero.co.uk
29-30 Old Buckenham, Norfolk, Old Buckenham Air Show, oldbuck.com
29-6 Aug Aston Down, Glos, 50th VGC International Rally, vintagegliderclub.org/events
30 Lundy Island, off N Devon coast, Lundy Sunday Fly-in, bodminairfield.com/events/

AUGUST 2023

1 Popham, Hants, Honourable Company of Air Pilots Fly-in, popham-airfield.co.uk/events-calendar-2023
4-5 Compton Abbas, Dorset, British Aerobatics Golding Barrett, Roy Legg & Don Henry Trophies, aerobatics.org.uk/events
5 East Kirkby, Lincs, LAHC Museum Air Show, lincsaviation.co.uk
5 Palmers Farm, E Sussex, Palmers Farm Fly-in, southernstrut.org/activities/
5-6 Dunkeswell, E Devon, 80th Anniversary event & LAA Devon Strut Fly-in, devonstrut.co.uk
5-6 Eshott, Northumberland, Eshott Summer Fly-in, facebook.com/eshottaerodrome
5-6 New Farm, Piddington, Northants, Big Fly-in incl Xair, Shadow & Skyranger Rally, PPR.CGChamb@aol.com
5-6 Rufforth East, N Yorks, We All Fly & Meet the LAA, rufforthairfieldeast.co.uk/events
5-6 Stow Maries, Essex, Stow Maries at War: The Call to Arms, stowmaries.org.uk
5-13 Dunstable, Beds, Dunstable Regionals, members.gliding.co.uk/competitions/
5-13 Keevil, Wiltshire, BGA Bannerdown & Inter-Services Regionals, members.gliding.co.uk/competitions/
5-13 Lasham, Hants, Lasham Regionals, members.gliding.co.uk/competitions/
6 Old Warden, Beds, Carnival Air Show, shuttleworth.org/events/airshows/
10 Popham, Hants, Evening Fly-in & BBQ, popham-airfield.co.uk/events-calendar-2023
10-13 Ashton Court, Bristol, Bristol International Balloon Fiesta, bristolballoonfiesta.co.uk
12 Bodmin, Cornwall, Cornish Pasty Fly-in & Kernow Kapers Fun Day, bodminairfield.com/events
12 IWM Duxford, Cambs, Duxford Flying Day: 19 Squadron, iwm.org.uk/airshows
12 Shobdon, Herefordshire, VPAC Western Fly-in, vintagepiper.co.uk/events/
12-13 Blackpool seafont, Lancs, Blackpool Air Show, visitblackpool.com



12-20 Husbands Bosworth, Leics, Hus Bos Challenge Cup, members.gliding.co.uk/competitions/
13 Bicester, Oxford, VAC Members Fly/Drive-in Picnic, vintageaircraftclub.org.uk
13 De Havilland Aircraft Museum, London Colney, Herts, Aviation Enthusiasts Show, facebook.com/groups/224618573315184
16 Cromer seafont, Norfolk, Cromer Carnival Air Display, cromercarnival.co.uk
17-20 Eastbourne seafont, E Sussex, Airbourne-Eastbourne International Airshow, visiteastbourne.com/airshow
18-20 Northampton Racecourse, Northampton, Northampton Balloon Festival, thenorthamptonballoonfestival.co.uk
18-20 Popham, Hants, LAA Grass Roots Fly-in, laa.uk.com
19 Compton Abbas, Dorset, Vintage Fly-in, comptonairfield.com/events
19 Old Warden, Beds, Flying Proms, shuttleworth.org/events/airshows/
19-20 South Yorkshire Aircraft Museum, Doncaster, S Yorks, Open Cockpits Weekend, southyorkshireaircraftmuseum.org.uk/events
19-27 Gransden Lodge, Beds, BGA Junior Nationals, members.gliding.co.uk/competitions/
20 The Helicopter Museum, Weston-super-Mare, Somerset, World Helicopter Day, helicoptermuseum.co.uk/events.htm
20 The Leas, Folkstone, Kent, Folkestone Air Display, folkestone-hythe.gov.uk
20 Vulcan Restoration Trust, London Southend Airport, Essex, Visit the Vulcan Classic Jets Day, avrovulcan.com/events
20-27 Pocklington, E Yorks, Two-Seater Competition, members.gliding.co.uk/competitions/
24-25 Clacton seafont, Essex, Clacton Airshow, clactonairshow.com
24-26 Conington, Cambs, British Aerobatics SPO & INT National Championships, aerobatics.org.uk/events
25 Sidmouth seafont, S Devon, Sidmouth Airshow, visitdevon.co.uk/sidmouth
25-27 Strathaven, South Lanarkshire, Balloon Festival, strathavenballoonfestival.co.uk
25-27 Wingland, Spalding, Lincs, Wingland Wacky Weekend 2, winglandairfield.wordpress.com
26 Brighton, N Yorks, Summer BBQ Fly-in, realaero.com/bugle.html
26 Eshott, Northumberland, The Big Machine Meet, facebook.com/eshottaerodrome
26 Henstridge, Somerset, Wings and Wheels, wingsandwheelshenstridge.com
26 IWM Duxford, Cambs, Duxford Flying Evening, iwm.org.uk/airshows
26 Old Warden, Beds, VAC Fly-in, vintageaircraftclub.org.uk
26-27 Headcorn, Kent, Stampe Club International Fly-in, stampeclub.com/events--news.html
26-27 Montrose, Angus, Scottish Aero Club Pop-Up Airfield Fly-in, scottishaeroclub.org.uk/events-2/
26-27 Rhyl seafont, Denbighshire, Rhyl Air Show, denbighshireleisure.co.uk
26-2 Sep Sutton Bank, N Yorks, Slingsby Vintage Gliding Week, ygc.co.uk/events/slingsby-vintage-gliding-week
27 Fenland, Lincs, Wings and Wheels, fenlandairfield.co.uk
27 Little Gransden, Beds, Little Gransden Air and Car Show, littlegransdenairshow.co.uk
27-28 North Weald, Essex, London Fighter Meet, fightermeet.co.uk
28 East Kirkby, Lincs, East Kirby @ 80, lincsaviation.co.uk/events/east-kirkby-at-80.htm
31-03 Sep Bournemouth seafont, Dorset, Bournemouth Air Festival, bournemouthair.co.uk

SEPTEMBER 2023

1-3 Alderney, Guernsey, CI, 30th Annual Alderney Fly-in, flyalderney.com/alderney-fly-in-2023/
1-3 Foxlands Farm, Cosby, Leics, The Victory Show, thevictoryshow.co.uk
1-3 Perth, Scone, SAC, Perth & Meet the LAA Fly-in, scottishaeroclub.org.uk
1-3 Wickenby, Lincs, Wickenby Aerodrome 50th Anniversary, austerclub.org/events/
3 Old Warden, Beds, Bedfordshire Vintage Air Show, shuttleworth.org/events/airshows/
8 Goodwood, W Sussex, Goodwood TR Challenge, austerclub.org/events/
8-9 Ayr seafont, South Ayrshire, Ayr International Air Show, southayrshire.gov.uk
8-10 Goodwood, W Sussex, Goodwood Revival, goodwood.com
8-10 Longleat Grounds and Gardens, Wilts, Sky Safari Hot Air Balloon Meet, longleat.co.uk/whats-on/sky-safari
8-10 Saltby, Leics, British Glider Aerobatic Championships, aerobatics.org.uk/events
9 Bodmin, Cornwall, Cornwall Strut Fly-in, bodminairfield.com/events/
9 Old Warden, Beds, de Havilland Fly-in, shuttleworth.org
9 Sleep, Shropshire, VPAC Fly-in, vintagepiper.co.uk/events/
9-10 Southport Seafont, Merseyside, Southport Airshow, visitsouthport.com
10 Popham, Hants, Auster Fly-in, popham-airfield.co.uk/events-calendar-2023
14 St Aubin's Bay, Jersey, CI, Jersey International Air Display, jerseyairdisplay.org.uk
14 St Peter Port, Guernsey, CI, Guernsey Battle of Britain Air Display, guernseyairdisplay.com
16 Sutton Meadows, Cambs, Cambridgeshire Microlight Club Fly-in, cambsmicrolightclub.co.uk
16 Bodmin, Cornwall, Bader Braves FOG Disabled Children's Day, bodminairfield.com/events/
16 Compton Abbas, Dorset, Vintage Fly-in, comptonairfield.com/events
16 Vulcan Restoration Trust, London Southend Airport, Essex, Vulcan XL426 Summer Taxi Run, avrovulcan.com/events
16-17 The Helicopter Museum, Weston-super-Mare, Somerset, 'Behind the Scenes' Spotters Weekend, helicoptermuseum.co.uk/events.htm
16-17 IWM Duxford, Cambs, Duxford Battle of Britain Air Show, iwm.org.uk/airshows
16-17 Leicester, Leics, British Aerobatics Tiger Trophy, aerobatics.org.uk/events
16-17 Rougham, Suffolk, Suffolk Coast Strut & Meet the LAA Fly-in, roughamairfield.co.uk
23 Enstone North (Grass), Oxford, LAA Oxford Strut Pie-in, oxfordlaa.co.uk/events
23-24 Compton Abbas, Dorset, Pooleys Air Days, pooleys.com/pooleys-air-day

Warbirds will gather on 15-16 July for the return of Flying Legends at its new Yorkshire venue the former RAF Church Fenton now Leeds East Airport

OVERSEAS

JULY 2023

1 Cedar Creek Lake, Tyler, Texas, USA, Thunder over Cedar Creek Lake Air Show, ccveteransfoundation.org/thunder-over-cedar-creek-lake-airshow/

1-2 Aérodrôme de Saint-Hubert, Saint-Hubert, Belgium, Fly'in Festival St-Hubert, sainthubert-airport.com/Fly-in-Festival_1_87.html

1-2 Aeroklub Ziemi Piotrkowskiej, Piotrków Trybunalski, Poland, Piotrków Fly Fest, flyfest.pl

1-2 Bienenfarm, Brandenburg, Germany, Stearman & Friends Fly-in, flugplatz-bienenfarm.de

1-2 Châtillon-sur-Seine, Bourgogne-Franche-Comté, France, Jurca Aircraft Meet, facebook.com/avionsmarceljurca

1-2 Koksijde Air Base, West Flanders, Belgium, Belgian Open Aerobatic Championship, westaviationclub.be

1-2 Le Touquet Paris-Plage, Hauts-de-France, France, Le Touquet Paris-Plage International Airshow, letouquet.com/agenda/meeting-aerien-le-touquet-air-show/

1-2 Pithiviers-Le-Vieil, Centre-Val de Loire, France, Stampe Fly-in, facebook.com/groups/606985682750665

1-2 Speck-Fehraltorf, Canton of Zürich, Switzerland, 75th Anniversary Flying Day, flugtage2023.ch

1-2 Tinker Air Force Base, Oklahoma City, Oklahoma, USA, Tinker Air Show, tinker.af.mil/TinkerAirShow/

1-9 Älleberg, Falköping, Sweden, Vintage and Retro Gliding Week, svs-se.org

1-15 Garray, Soria, Spain, 12th FAI Women's World Gliding Championship, fai.org/events

2 Cuatro Vientos Airport, Madrid, Spain, Fundación Infante de Orleans Flying Day, fio.es

5 Koksijde Air Base, West Flanders, Belgium, Open Day, facebook.com/profile.php?id=100072448112061

6-8 Dinslaken/Schwarze Heide, North Rhine-Westphalia, Germany, Open German Aerobatic Championship & Extra Fly-in, facebook.com/extraaircraft

6-8 Wonderboom National Airport, Pretoria, South Africa, Aero South Africa, aerosouthafrica.za.messefrankfurt.com/pretoria/en.html

6-9 Muskegon County Airport, Muskegon, Michigan, USA, Wings Over Muskegon Air Show, wingsovermuskegon.com

7-9 Jena-Schöngleina, Thuringia, Germany, Cessnatreffen, edbj.de/index.php/cessna-treffen

7-9 Kuhmo, Kainuu, Finland, Kuhmo Fly-in, kuik.fi/fly-in/

8 Flughafen Klagenfurt, Klagenfurt, Austria, Imkereit Raunig Flugshow, flugshow.eu

8 Flughafen Klagenfurt, Klagenfurt, Austria, Imkereit Raunig Flugshow, flugshow.eu

8 Flughafen Klagenfurt, Klagenfurt, Austria, Imkereit Raunig Flugshow, flugshow.eu



8 Les Mureaux-Verneuil, Ile-de-France, France, Fête de l'Air de l'Aérodrome Les Mureaux, facebook.com/aerodromemureaux

8 Skagit Regional Airport, Burlington, Washington, USA, Heritage Flight Museum Fly Day, heritageflight.org

8 Stanserhorn, Nidwalden, Switzerland, OldtimAIR parade, stanserhorn.ch/de/erleben/veranstaltungen

8-9 Pensacola Beach, Florida, USA, Pensacola Beach Air Show, visitspensacolabeach.com

8-14 Tours-Le Louroux, Centre-Val de Loire, France, Coupe des Cent Châteaux gliding contest, touraine-planeur.org

12-16 José María Córdova International Airport, Rio Negro, Colombia, F-AIR Colombia, f-aircolombia.com.co

15-16 Duluth International Airport, Duluth, Minnesota, USA, Duluth Air and Aviation Expo, duluthairshow.com

15-16 McChord Field, Joint Base Lewis-McChord, Washington, USA, JBLM Airshow & Warrior Expo, jblm.armymwr.com/calendar

19-22 Various locations, Montenegro, MontAdria Seaplane Regatta, montadria.me

21-23 Brienne-Le-Château, Grand Est, France, RSA Euro Fly-in, euroflyin.rsafrance.com

21-23 Playa San Lorenzo, Gijón, Spain, Festival Aéreo de Gijón, festivalaereogijon.com

22 Boundary Bay Airport, Delta, British Columbia, Canada, Boundary Bay Airshow, facebook.com/BoundaryBayAirshow

22 Peace River Airport, Peace River, Alberta, Canada, Peace Regional Airshow, peaceregionalairstow.com

22-23 Bradford Beach, Milwaukee, Wisconsin, USA, Milwaukee Air & Water Show, mkeairwatershow.com

22-23 Dayton International Airport, Dayton, Ohio, USA, CenterPoint Energy Dayton Air Show, daytonairshow.com

22-23 Eielson AFB, Alaska, USA, Arctic Lightning Airshow, facebook.com/events/833362977826065/

22-23 Flying Cloud Airport, Eden Prairie, Minnesota, USA, AirExpo, wotn.org/airexpo/

23 Couhé-Vérac, Nouvelle-Aquitaine, France, Meeting Aérien, meeting-couhe.com

23 Couhé-Vérac, Nouvelle-Aquitaine, France, Meeting Aérien, meeting-couhe.com

23 Couhé-Vérac, Nouvelle-Aquitaine, France, Meeting Aérien, meeting-couhe.com

23 Couhé-Vérac, Nouvelle-Aquitaine, France, Meeting Aérien, meeting-couhe.com

24-30 Wittman Regional Airport, Wisconsin, USA, EAA AirVenture Oshkosh, eaa.org/airventure

26-5 Aug Pociūnai, Kaunas, Lithuania, 25th FAI World Glider and 13th World Advanced Glider Championships, fai.org/events

29 Texada Airport, Texada Island, British Columbia, Canada, Texada Annual Fly-in, texada.org

29-30 Bray seafront, County Wicklow, Ireland, Bray Air Display, brayairdisplay.com

29-30 Joe Foss Field, Sioux Falls, South Dakota, USA, Sioux Falls Airshow, siouxfallsairshow.com

29-30 Lethbridge Airport, Lethbridge, Alberta, Canada, Lethbridge International Air Show, lethbridgeairshow.com

30 JASDF Chitose, Ishikari Subprefecture, Japan, Open House

30 Plage de Deauville, Normandy, France, French Flyair – Festival de Voltige, french-flyair.com

30-4 Aug Mâcon, Bourgogne-Franche-Comté, France, 23rd FAI World Rally Flying Championship, wrfc2023.com

30-12 Aug Arnborg, Central Jutland, Denmark, FAI Gliding Junior European Championships, fai.org/events

31-14 Aug Leszno, Wielkopolska Province, Poland, FAI Gliding European Championships, fai.org/events

AUGUST 2023

4-6 Lake Washington, Seattle, Washington, USA, Boeing Seafair Air Show, seafair.org

4-6 Villeneuve Airport, Alberta, Canada, Alberta International Airshow, albertainternationalairshow.com

5 Alpe Huez Altiport, Auvergne-Rhône-Alpes, France, Alpe d'Huez Air Festival, facebook.com/fetedelair.alpedhuez

5 Birr, County Offaly, Ireland, Birr Air Display, birrairdisplay.ie

5 Hradec Králové, Czech Republic, Legends of the Sky, legendynebes.cz

5-6 Liepāja International Airport, Latvia, Baltic International Airshow, facebook.com/bia2022

5-6 Midden-Zeeland, Arnhem, Netherlands, Flying Days, zeeuwsevliegdagen.nl/

5-6 Midden-Zeeland, Arnhem, Netherlands, Flying Days, zeeuwsevliegdagen.nl/

5-6 Midden-Zeeland, Arnhem, Netherlands, Flying Days, zeeuwsevliegdagen.nl/

5-6 Midden-Zeeland, Arnhem, Netherlands, Flying Days, zeeuwsevliegdagen.nl/

5-6 Midden-Zeeland, Arnhem, Netherlands, Flying Days, zeeuwsevliegdagen.nl/

5-6 Midden-Zeeland, Arnhem, Netherlands, Flying Days, zeeuwsevliegdagen.nl/

B-29 Doc is returning to EAA AirVenture, taking part in the daily airshow and giving flight experience rides from Appleton Airport from 24-27 July, after which it will be on static display at Oshkosh until 30 July

5-6 Owls Head, Rockland, Maine, USA, Wings & Wheels Spectacular, owlshead.org/events/

5-6 Walldürn, Baden-Württemberg, Germany, 3rd Odenwald Fly-in, fscs.de/aktivitaeten/flyin

6 Sarlat Domme Aerodrome, New Aquitaine, France, Sarlat Air Show, aeroclubdusarladais.fr/

6-13 Flugplatz Bienenfarm, Brandenburg, Germany, Quiet QUAX glider week, flugplatz-bienenfarm.de

11-13 Abbotsford, British Columbia, Canada, Abbotsford International Airshow, abbotsfordairshow.com

11-13 Bautzen-Litten, Lower Saxony, Germany, Flugtage Bautzen, flugtage-bautzen.de

12-13 Billings Logan International Airport, Montana, USA, Yellowstone International Air Show, yellowstoneairshow.com

12-13 Greater Rochester International Airport, New York, USA, Rochester Airshow, rocairshow.com

Our aim is to make this monthly calendar listing as complete and up-to-date as possible. We welcome news of your air display, fly-in, one-type gathering, rally, air race, aerobatic competition or any other 'flying' orientated event to which visitors are welcome. Please send us the date(s), event name, location and website where further up-to-date information can be obtained. Please do remember to let us know if your event is changed or cancelled.

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Piper PA-38-112 Tomahawk – G-BRHR

This is not a run of the mill Tomahawk. Good paint, exceptional interior and outstanding avionics comprising Garmin 345, Garmin 650, Garmin 255, KR87 and KN64. As well there is an Aera 66, Garmin ADSB with Sky echo and a Samsung with Sky Demon. A very complete little 2 seater that would truly rate 8/10.

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Cessna 340 – N3HK – 1975

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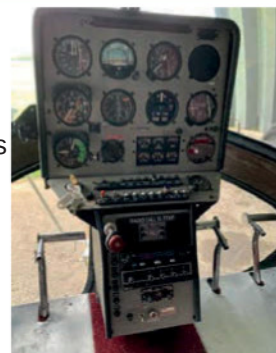


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CESSNA FR182 - N656JM - 1980

TT 3594 Eng 1830 Prop 91. The Cessna 182 RG is a really hard act to follow. Fast, comfortable, great short field performance and huge load lifting capacity. This example has fantastic avionics including JPI 760, engine monitor, G5, 430 and stormscape and the jewel in the crown, it is fully de-iced.

BACK ON THE MARKET
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CESSNA 172XP - N78XP

The big daddy of 172s Continental. The 6 cylinder engine provides enormous all round ability. These magnificent machines have great short field performance and excellent lifting capacity, on top of that, a 120kt cruise. Avionics are Garmin 430-340 & 328. These are hard to find!

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SOCATA TB10 - G-BGXT - 1979

TT, eng & airframe 1200

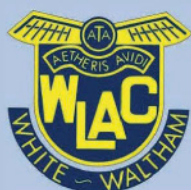
Really nice example of this really good looking tourer. Good paint and nearly new leather. Avionics comprise of Garmin 340-430-330-496 and SL30. She also sports a simple Century I Auto Pilot. A truly good value 120kt tourer.

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AIRWAYS

A very different Dubai

Dubai is the most changed of all my destinations. I last stayed there in September 1980 when things were very different.

Seventies Dubai was one of several small but growing proto-cities around what was then called the Persian Gulf. Their culture seemed little different, albeit perhaps more 'backward' and less affluent. There certainly wasn't the rampant Muslimism of today's 'Arabian Gulf'.

On my first visit in April 1972, oil had only recently been discovered, seventy miles offshore in Fateh, and merely in small quantities. This revenue began flowing in 1969 but the forward-thinking Sheikh Rashid had already inaugurated a big infrastructure development programme. Dubai's population was then 86,000, many of whom were Indian and Pakistani construction workers. Now it tops 3.5million – forty times as many.

The most modern thing was the airport's 12,500-foot long single asphalt runway which was entirely surrounded by buff sandy desert with more desert beyond, as far as the eye could see. Taxying in, we could admire the single, stylish 1971 terminal building, designed by Britons Page & Broughton, financed by Lloyds Bank and built by Costain. Its award-winning facade was the envy of the Arab world with its unsupported helical stairs, unfeasibly slim white concrete columns, soaring roof capitals and latticework windows redolent of a Bedouin encampment. Passengers admired its elegance as they walked across the searing tarmac in the blazing heat.

Dubai's other memorable modern architecture was the sculpturally arched clock tower, erected on an isolated roundabout part-way between airport and town along the wide and generally vacant dual-carriageway. Otherwise that road had nothing beside it but a few isolated, forlorn, straggly and desiccated palms, plus rows of desultory piles of sand. Over subsequent years trees materialised from these, followed by continually irrigated lawns, eventually making Dubai

a pleasant and verdant (if humid) city.

The roads were mostly empty, with Land Rovers the most common vehicles. Donkeys, goats and camels could still be seen in the backstreets. The Old Fort could only be viewed from its outside and was encircled by narrow, dusty streets of mostly two-storey mud-brick homes. Something I really admired when they were explained to me were the ingenious wind towers, erected to afford respite from the summer's terrific heat. Usually square stone edifices standing on the roofs, but often made of only bamboo poles and canvas screens, these caught what light breezes might be passing and directed them vertically downwards to cool the occupants below.

We stayed in the six-storey Carlton Hotel in splendid isolation, on a sandy patch of the Creek's bank. Built in 1968, this was only Dubai's third hotel. On the ground floor behind was a little Italian restaurant where we openly dined on red wine and what many crew claimed were the best pizzas in the world.

From the Carlton's windows I looked down on rows of dhows moored to the bank below, on the other side of a narrow tarmac road. Sensitive folk were advised not to peer out around dawn, when their crews would perform morning ablutions in the open-bottomed 'thunder-boxes' on their poop decks.

Nearby, more dhows were being constructed using methods employed for thousands of years. Brown-skinned men clad in white singlets, navy shorts and flip-flops stood astride massive timbers swinging adzes between their feet to carve out keels and planks before fitting them together by hand. I was told the engines mostly came from scrapped London buses, although a few with powerful twin diesels were employed in the age-old gold smuggling trade to India.

I occasionally shopped in the crowded Souk. Each narrow premises had mud brick walls and open fronts with black awnings. Once accompanying a stewardess, at her request to a gold merchant, I became aware of her heavy breast

resting on the back of my innocent hand on the glass counter. It wasn't until many years later I realised this might not have been accidental.

There I bought two Chinese air rifles for a couple of US dollars apiece (they still work well). I later bought a new-fangled Sony Walkman and several pirated cassette tapes. I also purchased a semi-transparent, almost cube-shaped flask, in which half a bottle of Scotch came less than two inches up its sides, especially if one held it for inspection with the base slightly angled towards the Waterguard Officer. Thus we fulfilled our British Customs allowance of 'two tots', and my home decanter was perpetually near-full of 'a specially-selected blend of premium whiskies'.

The best booze bargains though were in the airport's duty-free shop, where everything cost just one pound. Over the years I bought many litre bottles of Johnnie Walker Black Label or Bacardi Gold, taking the remnants home in my magic flask. My most memorable purchase there was a tall bottle of Galliano intended for mixing into the British Airways cocktail of that decade, Harvey Wallbangers. Knowing my ten-day trip ended with a passenger flight back from Sydney in one of our new 747s, I carefully dragged this bottle halfway around the world, explaining to every customs officer en-route that "It's a birthday present for my girlfriend and I shall export it intact tomorrow."

Arriving back in London, I grabbed a bunch of flowers and a box of chocolates, pushing them into the now rather crumpled, but still sturdy, manila bag. Sadly, having nursed this Galliano for nearly 20,000 miles, it shot through the bag's saturated base to smash on the doorstep of my stewardess girlfriend's Lancaster Gate apartment building.



BOB GRIMSTEAD

Bob is a former professional pilot. In over thirty years of airline flying he has operated from more than 250 airports in every continent – except Antarctica

ILAFFT

Close encounters of the disturbing kind

Words: David Scrutton

Looking back over nearly forty years' flying experience, I recall a number of incidents and events when I could honestly admit I learned about flying from that, but none surpasses the day in the mid 1980s when, recently qualified to exercise the privileges of my new licence, I rented the club C172 to take my sister and two friends for a ride.

I'm certain that the seeds of the incident lay in an antiquated and frankly inadequate training system. However, I make no excuse for my own failings; had I followed my instructor's advice about keeping a good lookout, especially in the circuit, then a close encounter with a potentially catastrophic outcome would have been avoided.

I cannot speak for the standards at other clubs in the 1980s, but the CFI at mine was rather set in his reliance on the Mk 1 Eyeball, to the exclusion of all other aids. To pass one's GFT without ever having used the radio in earnest, and to gain one's licence on the basis of a brief test following a crammed but limited course on radio usage, would be unheard of today. CAP 413 was not a familiar title back then; indeed, it didn't even lie tantalisingly on my horizon. Reading it in later years was a revelation.

Moreover, the club did not use or approve the radio in the circuit. I well remember the raised eyebrows of fellow aviators when I innocently let slip the identity of my base, and I recall the verbal beatings I received when (rather inadequately) I attempted to use the radio at visited airfields. To make matters worse, these half-hearted and inevitably one-way conversations were conducted via the cockpit speaker and hand-held mike. Did I possess a headset? You can guess!

We are blessed today with a mountain of useful advice to help us aviate safely. Perhaps rather

more relevant to my story, we are encouraged to consider, before a flight, the safety of those who might be affected by our actions or omissions. I refer here, not to such issues as the 500ft rule (obviously very important) but to passenger briefing. What the guides do not tell us, though, is how to distinguish whether certain passengers should ever be invited on board in the first place. I had carried one such, who had given no indication of his tendency to air-sickness until the fateful flight. Fortunately I had packed a bag, and he was in the rear, so I was spared the distraction, to some extent, at least. This, however, did not prepare me for the nightmare that I am about to unfold.

I suppose we normally try to take flying those whom we know fairly well. It is not in the nature of things to give free rides to complete strangers, but this is effectively what I did. The couple I took on board that day

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were my sister's friends. I had met them socially once or twice and was happy to accommodate my sister's request for a trip. It was without any inkling of my fate that, with a cursory outline of the main items in the cabin (including the sick-bag) and a warning that light aircraft may invoke a sense of insecurity, I set to getting the show off the ground.

My abiding recollection is that this was a very short flight, but that it seemingly lasted for ages! We certainly had not progressed far from the field when I became aware of a noise, a sort of mewing, emanating from somewhere behind me. Initially, there had been some animated chatter, as expected, but this had given way to this strange, rather unworldly noise. As I have indicated, my training had not equipped me with a penchant for headphones, so I was unable to ignore

the noise or attenuate it. The mewing subsided, only to return more intensely.

Convinced that this dramatic ululation evinced some extreme emergency being played out behind me, I decided to return to base. There being no expectation, then, that anyone performing such a basic manoeuvre would announce that intention, I slotted into the circuit traffic for an expedited return to terra firma, looking out for other aircraft and trying to ignore the caterwauling passenger.

My anxiety to get down clouded my judgement (and eyesight apparently), so I turned base believing that I was clear for final approach. However, a pupil and instructor had beaten me to it. My first view of them was as we converged: we still on base, they on final, now beginning to grow in my two o'clock at an alarming rate. My only route was to dive beneath the converging 152.

I never did discover whether my passengers were aware of the close-call. The instructor was: letting me know his displeasure in no

uncertain terms. The noisy passenger had recovered by the time we got back to the C172 tie-down. Apparently, she had felt nauseous and was not, as I had feared, in need of urgent medical attention.

Lessons learned: I bought a headset very soon after; found a copy of CAP 413, commenced an IMC course which helped my radio confidence, and learned to adopt a wider scan, particularly in the circuit. I didn't have to change my club; in line with many other such establishments, it modernised and is now a very professional operation.

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CONTACT

Rob Stewart

Ian Jones

Alain Maire

Louisa Noël

Phone: +44 1622 278138

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